



Study on Agricultural Infrastructure in Potato Cultivation with Reference To Pune District

Bharat Maruti Kank, Research Scholar, Bir Tikendrajit University
Dr. Veer Sharad Kisanrao, Research Supervisor, Bir Tikendrajit University

Abstract

Infrastructure plays a vital role in agriculture at every single step such as supply of inputs, sowing of crops and for post-harvest management. Investment on infrastructural practices in agriculture must be in a planned manner to avoid post-harvest losses and enhances productivity. India is lacking with infrastructure up gradation with respect to storage houses, pack houses, absence of proper supply chain for agricultural inputs. However, the present study has been undertaken to analyze agricultural infrastructure in potato cultivation. The study focuses on to study the impact of infrastructure development in potato cultivation, to study the present condition of agricultural infrastructure in potato cultivation, to evaluate farmer's satisfaction towards agricultural infrastructure. The data for the present study has been collected by meeting 60 potato cultivators from Pune District with the help of structured questionnaire. It was found that majority of the potato cultivator prefer resource based infrastructure development and strongly agree that agricultural infrastructure leads to high yield.

Keywords: agriculture development, infrastructure, farmer, potato cultivation etc.

I INTRODUCTION

Agriculture has a major role in the overall progress of the economy. Agriculture impacts society in many ways including supporting livelihoods through food, habitat, and jobs and provides raw material to many food product oriented companies and helps in building strong economies through trade. India stands second in the cultivation of potato next to China. It is cultivated in 23 states of India. Potato is most important and widely consumed food in the world. It is the most economic food and is considered a friend of poor.

Potato (*Solanum tuberosum* L.) is one of the major food crops which recorded total global production of 388.1 million metric tonnes (mt) in 2017-18. Out of the major staple food crops, potato production (388.1 mt) is exceeded only by maize (1077.98 mt), wheat (761.88 mt) and rice (494.88 mt) (FAOSTAT, 2017). According to the three years (2012-2014) averages, globally, India ranks 3rd in area and 2nd in terms of production next to China. The nutritional quality, high productivity and acquiescence for inclusion in intensive cropping systems of this short duration crop reflects its great potential in modern agriculture to feed the exponentially rising population in the developing countries. But, the intensive cultivation of potato crops urges increased use of fertilizers, pesticides and other chemicals leading to high input costs with plateauing yields. Blanket dose of fertilizers as well as imbalance use of nutrients not only increases the cost of farm inputs but also degrades soil condition and causes severe environment pollution. Indiscriminate use of insecticide as well as fungicide is very common in potato crop which contaminate the environment and deteriorate product quality. Therefore, the chemical inputs need to be optimised based on actual requirement of the crops for sustainable crop production. Furthermore, potato production is associated with a high tillage practices, number of tillage operation would depend on soil type, previous crop etc



II LITERATURE REVIEW

- A study on “**infrastructure and agricultural development in Maharashtra state**”. The present study majorly focuses to estimate the trends in major components of infrastructure for agricultural development in the country, to analyze the level; of development of various agriculture infrastructural indicators across different districts in Maharashtra. The data for the present study has been collected from purely secondary sources. It present study interprets the relationship between the level of infrastructure and the agricultural output.
- A study on “**constraints in potato cultivation faced by the potato growers**”. The present study majorly focuses towards the constraints faced by the potato growers with respect to potato cultivation. The data for the present study has been collected by meeting 120 potato growers from 8 villages of 2 selected blocks of Pune district. Non probability sampling technique has been used for the purpose of data collection. From the study it was found that farmers were lacking with support with respect to price fixation by the government for potato crop.
- A study on “**An Empirical Study on the Effect of Agricultural Infrastructure Investment on Economic Growth**”. In the present study the empirical results shows that agricultural infrastructure gradually improves the national economy and investment in agricultural infrastructure promotes economic growth in further period. From the present study it was found that investment in agricultural infrastructure in western region contributes more to the economic growth and statistical results are more significant.
- A study on “**a review on India’s rural development and agricultural infrastructure**”. The present study reveals that rural infrastructure is important to bring drastic transformation in raising human wellbeing and boosting agricultural development. For the improvisation of agricultural sector huge investment is necessary which may further experience high risk and low return. Even further it may lead to upgrade countries current traditional agriculture and subsistence farming practices into the most cutting edge and dynamic farming system.

III OBJECTIVES

1. To study the present condition of agricultural infrastructure in potato cultivation
2. To evaluate farmers satisfaction towards agricultural infrastructure
3. To study the impact of infrastructure development in potato cultivation.

IV SCOPE OF THE STUDY

The present study deals with agricultural infrastructure in potato cultivation. The present study focuses towards potato cultivators in Pune District only. The numbers of respondents were limited to 40 only. The study focuses only on agricultural infrastructure in potato cultivation by ignoring others.



V RESEARCH METHODOLOGY

The data for the present study has been collected from both primary and secondary sources.

Primary data: primary data has been collected with the help of structured questionnaire by meeting 40 potato cultivators of Pune district only. Simple random sampling technique has been used for the purpose of data collection.

Secondary data: secondary data has been collected from various secondary sources like articles, journals, websites books etc.

VI LIMITATIONS

1. The study area is limited to Pune District only.
2. The conclusions obtained cannot be appropriate as the respondents were limited to 40 only.
3. The study focuses only on agricultural infrastructure in potato cultivation by ignoring others

VII RESULTS AND DISCUSSIONS

Table No-1: Year of experience in potato cultivation

SI No	Particulars	No of respondents	Percentage
1	Below 1 year	03	7.5%
2	1-3 years	07	17.5%
3	3-5 years	13	32.5%
4	Above 5 years	17	42.5%
	Total	40	100%

(Source: Field Survey)

From the above table it can be analyzed that out of 50 respondents, 7.5% are having below 1 year of experience in potato cultivation, 17.5% are having 1-3 years of experience, 32.5% are having 3-5 years of experience, 42.5% are having above 5 years of experience.

From the above analysis it can be interpreted that majority of the potato cultivators are having above 5 years of experience as potato cultivators.

Table No-2: Major issues in potato cultivation

SI No	Particulars	No of Respondents	Percentage
1	Poor soil fertility	08	20%
2	Lack of production input	03	7.5%
3	Change in weather	18	45%
4	Conservation problem	08	20%
5	Others	03	7.5%
	Total	40	100%

(Source: Field Survey)

From the above table it can be analyzed that out of 40 respondents, 20% said poor soil fertility is the major challenge they have come across, 7.5% said lack of production input, 45% said changes in weather, 20% said conversation problem, 7.5% said other issues.

From the above analysis it can be interpreted that majority of the potato cultivators said that changes in weather is one of the major issues they have come across in potato cultivation.

Table No-3: Infrastructure development leads to high yield.

SL NO	Particulars	No of respondents	Percentage
1	Strongly Agree	08	20%
2	Agree	18	45%
3	Neutral	08	20%
4	Disagree	03	7.5%
5	Strongly disagree	03	7.5%
	Total	40	100%

(Source: Field Survey)

From the above table it can be analyzed that out of 40 respondents 20% strongly agree that agricultural infrastructure leads to high yield, 45% agreed with the above statement, 20% are neutral, 7.5% disagreed and 7.5% strongly disagreed with the above statement.

From the above analysis it can be interpreted that majority of the potato cultivators strongly agreed that infrastructure development leads to high yield.

Table No-4: Infrastructure Developments Expected In Potato Cultivation.

Sl No	Particulars	No of Respondents	Percentage
1	Input based infrastructure	8	20%
2	Resource based infrastructure	16	40%
3	Physical infrastructure	13	32.5%
4	Institutional infrastructure	03	7.5%
	Total	40	100%

(Source: Field Survey)

From the above table it can be analyzed that out of 40 respondents, 20% said Input based infrastructure development is expected in potato cultivation, 40% said resource based infrastructure, 32.5% said Physical infrastructure, 7.5% said Institutional infrastructure is expected in potato cultivation.



From the above analysis it can be interpreted that majority of the potato cultivators expected that resource based infrastructure development is necessary in potato cultivation and very few said institutional infrastructure is necessary.

VIII MAJOR FINDINGS:

- Majority of the respondent's i.e, 85% potato cultivators are males.
- The large number of respondent's i.e, 60% belongs to the age group of 35-45 years.
- Majority of the potato cultivators i.e, 74% educational status is SSLC and below.
- In the survey majority respondents around 60% have annual income of 40000-100000.
- Majority of respondent's i.e, 70% having own land for potato cultivation.
- In the survey majority 90% of respondents have used 2-5 acres of land for potato cultivation.
- Majority of the respondent's i.e, 50% prefer stream water.
- All most 52% of farmers have been growing potato from past 3-5 years.
- In the survey 70% of farmers cultivated potato in 90-120 days.
- In the survey 80% of farmers said potato cultivation is profitable.
- In the survey the 92% respondents said climate change leads to variability in potato cultivation.
- In the survey it was found that 80% of respondents said agricultural infrastructure is most essential input regarding development of Indian Agriculture.
- Majority of the respondents i.e., 40% said change in weather is the major issue in potato cultivation.
- 40% of respondents strongly agree that infrastructure development leads to high yield.
- Majority of the farmer's i.e, 40% of farmer's prefer fertilizer maintenance to increase potato cultivation. .
- In the survey 40% of respondents expect resource based infrastructure development in potato cultivation.
- In the survey most of the farmers i.e, 60% of respondents major source of finance is from credit cooperative society.
- To get high productivity and quality yield, majority of the respondents took advice from progressive farmers, agricultural officers, Kisan Seva Kendra, agricultural related magazines.
- In the survey 40% of farmers satisfied with the warehouse facility.
- In the survey most of the respondents having a problem in high transportation cost i.e, 40% and damage of yield major problem faced by farmers.
- In the survey 82% of respondents sell the potato in local market.
- In the survey most of the respondents i.e, 60% of farmers using strategy preferred selling the potato through a middle man and 30% are making direct sale.
- 40% respondents said lack of avenues of utilization of potato is the major constraint they have come across in potato cultivation.
- From the survey all most 80% farmers got the solution from KISAN call center.
- From the survey most of the respondent's i.e, 40% of farmers preferred storage at low temperature facility and 40% farmers prefer private and co-operative public storage facility in storing cultivated potato.
- From the survey most of respondents i.e, 50% of farmers preferred producer->cold storage->commission agent->wholesaler->retailer->consumer prefers this marketing channel for selling their products.



- From the survey 36% of respondent's faced price instability problem during potato marketing.
- From the survey 40% of respondents availed the benefit of capital investment subsidy for construction of modernization expansion of cold storage .majority 45% farmers availed the benefit scheme for central government.30% AGRMARK grading.
- It was found that most of the farmers i.e, 40% prefer crop loan facility and 20% prefer KISAN credit card scheme facility.
- All most all of farmer's opinion that potato seed cultivation is more profitable to the farmers.

IX SUGGESTIONS

- To reduce the cost which will be necessary to produce sufficient quality seeds locally and make them available to the farmers in time at a reasonable price.
- Development of market infrastructure such as road communication and transport should be improved.
- Farmers should get higher price at the market for their yield.
- Government should take initiative to reduce the pesticide fertilizer price.
- Certain initiatives need to be taken to create awareness among the farmers regarding cultivation, marketing, and price.
- Farmers must be provided adequate training so that they can produce potato properly.
- Modern technology should be undertaken for better labor cost control.
- Government should take necessary steps in keeping market price of potato remain uniform all round the year all over the country.
- The government should create more and more local or near warehouse facilities to store perishable agricultural produce.
- There should be effective maintenance and continuous improvement in the basic agricultural infrastructure facility.
- Strong relationship between institutional agricultural infrastructure indicates and the volume of agriculture production showed infrastructure indicators.

X CONCLUSION

Adequate infrastructure raises farm infrastructure and lowers farming cost and its fast expansion accelerated agricultural as well as economic growth rate. Infrastructure plays a vital role in agriculture at every single step via supply of inputs, sowing of crops and post harvest management. Investment on infrastructural practices in agriculture must be in a planned manner to avoid post harvest losses and enhance productivity. From the present study it can be concluded that agricultural infrastructure is necessary to improve cultivation standards which further leads to improvised standard of living of the farmers and leads to upliftment of rural areas. Government must take proper initiative regarding price fixation for the output. Proper warehouse facilities need to be carried out to store the cultivated yield. However, proper actions must be taken for the losses incurred by the farmers.

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