



## RESEARCH ARTICLE

# An analysis on marketing problems of apple fruit growers in Jammu and Kashmir

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## ABSTRACT

This paper concentrated on the problems of apple fruit growers in Jammu and Kashmir state during 2018-19. With the help of the random sampling method, 224 apple fruit growers were selected and data were collected by personal interview method by using a pre-tested interview schedule. Lack of storage facilities, Lack of Packaging material, Malpractices by commission agents, poor road and transport, shortage of labour, lack of facility of processing centres etc were the major problems expressed by the apple fruit grower. Different statistical test has been used in the study like Mean; Mean per cent Score, Correlation, Rank and Z test etc. The results found that Small fruit growers faced more problems as compared to large growers. The policymakers and developmental agencies should have to overcome these problems as the apple is the major cash crop of these districts in particular and the region as a whole.

**Keywords:** Apple fruit, growers, problems, Jammu and Kashmir, postharvest, quality control

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## INTRODUCTION

Apple is one of the principal fruits, grown in the temperate region of the world (Malik and Choure, 2015; Mir and Mir, 2018) concerning its Acreages, production, economic returns and High nutritive value. It is one of the most significant horticultural produce and is famous worldwide for its taste and health benefits. Apple is regarded as a major fruit crop of temperate regions of the whole world (Ali et al., 2018). In India, Apple is the fourth major fruit crop of which handsome produce comes from the state of Jammu and Kashmir. It has become an important cash crop in few states of India such as Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Nagaland and Sikkim (Rather, 2015). The distinctive location and climatic advantage enjoyed by the state of Jammu and Kashmir have made it an ultimate region for growing various types of fruits and apple is one among them. The state of Jammu and Kashmir is known as temperate "fruit bowl" of India and is bestowed by nature with the production of a variety of apples. Any problem with this fruit has a direct bearing on the economy of the nation. Apple production plays an important role in improving the standard of living, per capita income (Bhat and Choure, 2014), poverty alleviation, employment generation etc. About 70% of the population depends on this sector directly or indirectly. The area under apple cultivation in the state of Jammu and Kashmir was 164411 hectares with a production of 1882774 Metric tonnes in 2017-18 (Anonymous, 2017). The progress in production is quite important, but marketing has equal importance to develop a commercial crop (Bhat and Bhadhur, 2016; Shah and Songara, 2019).

Whenever cultivator assigns his land for any agricultural produce he keeps his one eye on cultivation season and another on the price will he get in the market. Marketing of fruits has become a very important concern now a day. Efficiency in the marketing system can be improved by identifying the problems faced by growers and formulating an appropriate strategy to ameliorate the problems (Vadivelu and Kiran, 2013). In the marketing of apple, the growers normally do not sell the fruits directly to the final consumers but involved various middleman like contractors, commission agents etc. Marketing of apple fruit, however, is quite intricate and risky due to the perishable nature of the produce, Seasonal Production, and Bulkiness. The continuum of prices from producer to the ultimate user, which is the result of demand and supply of transactions between various mediators at different levels in the marketing system. Successful fruit growing not only requires knowledge, skill and accuracy in the production but also in the marketing (Ahmad and Ahmad, 2013; Rather, 2015). Therefore, the marketing of fruits assumes a special implication in the apple cultivation (Bhat, 2014). In the absence of any organised marketing for the apple fruit, the growers are often deprived of fair returns from their produce and at the same time, the ultimate buyer suffers by not getting the apple fruit at reasonable rates (Rajan, 2014; Sain et al., 2013). It is high time for growers and all stakeholders who are engaged in the marketing of Apple in the state to execute themselves genuinely to adopt proper harvest practices. No, doubt, Apple fruit is a gainful Sector in the state of Jammu and Kashmir but with the rapid increase in acreage and production; several issues in marketing have emerged, keeping all these in mind the major marketing problems of the apple fruit growers are discussed in detail.

## **MATERIALS AND METHODS**

The present study was undertaken in Jammu And Kashmir State. From Kashmir division, two districts were selected having the highest area under apple cultivation namely Baramulla and Shopian. Two blocks from each district having the maximum area under apple cultivation were selected and from each selected blocks, four villages were chosen from each block by using non-probability sampling i.e. Convenience sampling. So in all 16 Villages were selected as sample villages for this study. The growers were stratified into two categories viz., Small and large based on their total holding size of land for the present study. The growers having upto 3 acres of land under apple cultivation were classified as small grower's while as the growers having more than 3 acres of land were categorised as large growers. After preparing the list, seven growers from each category were selected randomly from each selected village. Thus, in all 224 growers (112 small growers and 112 large growers) were included in the sample of the study.

To measure the problems faced by growers during the marketing of apple fruit, a suitable schedule consisted of various statements about problems relating to the marketing of apple fruit. To measure the degree of severity of problems, the responses were recorded on a five-point continuum viz., MS=Most severe, QS=Quite Severe, SWS=somewhat severe, LS=Less severe, NS=Not severe. The score '5' means most severe and '1' means not severe. The data collected during the period of the survey has been scrutinized, tabulated and compiled systematically and analysed thereafter using various Statistical tools. The "SPSS" software has also be used for various tests. Different statistical test has been used in the study like Mean; Mean per cent Score, Correlation, Rank and 'Z' test commensurate with objectives of the study etc.

## **RESULTS AND DISCUSSION**

When the cultivator striving for marketing his produce he also faces the difficulties in somewhat extend like other agriculture produce. In apple fruit, the growers face several difficulties relevance to i.e. Storage, price, demand, gluts in markets etc. These problems are discussed in Table 1.

Table 1: Marketing problems of apple fruit growers (N=224)

| Problems  | Small growers |      | Large growers |      | Total |      |
|---|---------------|------|---------------|------|-------|------|
|   | MPS           | Rank | MPS           | Rank | MPS   | Rank |
| <b>Shortage of skilled labour</b>                                       |               |      |               |      |       |      |
| Shortage of labour  | 58.53         | III  | 72.88         | I    | 65.70 | I    |
| Non-availability of labour at peak operations                           | 59.71         | II   | 67.85         | II   | 63.78 | III  |
| Higher wage rate  | 74.19         | I    | 56.25         | IV   | 65.22 | II   |
| Unavailability of technically sound labour                              | 53.03         | IV   | 65.53         | III  | 59.28 | IV   |
| <b>Lack of proper road and transport facilities</b>                     |               |      |               |      |       |      |
| Inefficient and costly transportation for the movement                  | 73.21         | I    | 51.42         | III  | 62.31 | III  |
| Lack of metallic roads connected to orchards                            | 70.46         | III  | 62.96         | II   | 66.71 | II   |
| Non-availability of transport in time                                   | 68.75         | IV   | 42.50         | IV   | 55.62 | IV   |
| Poor transportation infrastructure(Road, Rail etc)                      | 71.25         | II   | 68.57         | I    | 69.91 | I    |
| <b>Lack of finance</b>  |               |      |               |      |       |      |
| Documentation for the loan is difficult                                 | 69.14         | I    | 51.60         | II   | 60.37 | I    |
| Non-availability of a loan in time                                      | 67.46         | II   | 48.21         | III  | 57.83 | II   |
| Requirement of security   | 56.78         | V    | 46.25         | IV   | 51.51 | V    |
| The high-interest rate for the loan                                     | 57.32         | IV   | 55.03         | I    | 56.17 | III  |
| Loan Granted based on favouritism/preference                            | 64.82         | III  | 44.46         | V    | 54.37 | IV   |
| <b>Lack of packaging material</b>                                       |               |      |               |      |       |      |
| Shortage of wooden boxes and cardboard In time                          | 73.92         | II   | 78.92         | I    | 76.42 | I    |
| High cost of Packing material   | 75.00         | I    | 65.14         | II   | 70.07 | II   |
| Lack of packing facilities  | 72.50         | III  | 66.07         | III  | 69.28 | III  |
| The packaging material is not of standard quality.                      | 63.15         | IV   | 50.21         | IV   | 56.68 | IV   |
| <b>Lack of proper grading and standardisation</b>                       |               |      |               |      |       |      |
| Lack of proper grading facilities                                       | 70.71         | I    | 62.50         | I    | 66.60 | I    |
| Not aware of grading standards  | 69.28         | II   | 55.53         | II   | 62.40 | II   |
| Not much price difference   | 64.28         | III  | 55.00         | IV   | 59.64 | III  |
| <b>Lack of proper information and market issues</b>                     |               |      |               |      |       |      |
| Lack of market information.   | 71.42         | I    | 63.57         | I    | 67.49 | I    |
| Lack of Proper Information about intermediaries, commission agents etc. | 53.92         | IV   | 51.07         | III  | 52.49 | IV   |
| Misleading information  | 56.96         | III  | 48.57         | IV   | 52.76 | III  |
| Lack of timely information  | 64.46         | II   | 56.96         | II   | 60.71 | II   |

**Lack of Storage facilities**

|  |       |     |       |     |       |     |
|--|-------|-----|-------|-----|-------|-----|
| Lack of cold storage and Warehousing facilities.     | 81.78 | I   | 80.35 | I   | 81.06 | I   |
| Inadequate storage facility.                         | 78.21 | II  | 70.89 | II  | 74.55 | II  |
| The high cost of storage                             | 66.60 | IV  | 64.10 | IV  | 65.35 | IV  |
| Inadequate Cold chain capacities to serve the needs. | 71.42 | III | 67.85 | III | 69.62 | III |

**Lack of facility of processing**

|  |       |     |       |     |       |     |
|--|-------|-----|-------|-----|-------|-----|
| Poor infrastructure facilities connecting to processing units.   | 57.14 | III | 45.71 | IV  | 51.42 | IV  |
| Unavailability of Modern Processing units.                       | 60.35 | II  | 55.35 | II  | 57.85 | II  |
| Low level of value addition because of lack of processing units. | 54.28 | IV  | 49.28 | III | 51.78 | III |
| Lack of processing facilities (Waxing, Washing)                  | 88.39 | I   | 82.50 | I   | 85.44 | I   |

**Malpractices in buying and selling of apples**

|  |       |     |       |     |       |     |
|--|-------|-----|-------|-----|-------|-----|
| Deduct more charges  | 75.42 | II  | 68.21 | III | 71.81 | II  |
| Part-payment   | 72.85 | III | 68.35 | II  | 70.06 | III |
| Heavy fluctuating in the Mandi prices.                           | 76.07 | I   | 79.82 | I   | 77.94 | I   |
| Delay in payments  | 70.89 | V   | 53.57 | V   | 62.23 | V   |
| Do not take the consent of growers while selling the apple boxes | 71.42 | IV  | 62.50 | IV  | 66.96 | IV  |
| Lack of transparency in pricing at local mandies                 | 52.50 | VI  | 44.82 | VI  | 48.66 | VI  |

**Lack of quality standards**

|  |       |     |       |     |       |     |
|--|-------|-----|-------|-----|-------|-----|
| Level of quality standards to international markets is poor. | 53.75 | II  | 49.35 | II  | 51.55 | II  |
| Poor hygiene and safety standards.                           | 50.25 | III | 40.10 | IV  | 45.17 | III |
| Unavailability of trademark                                  | 70.30 | I   | 65.63 | I   | 67.96 | I   |
| Quality degradation is very high                             | 47.28 | IV  | 42.10 | III | 44.69 | IV  |

**Lack of proper knowledge**

|   |       |     |       |     |       |     |
|---|-------|-----|-------|-----|-------|-----|
| Lack of proper Knowledge about postharvest technologies | 69.64 | I   | 63.52 | I   | 66.58 | I   |
| Lack of Knowledge about long-duration training          | 59.64 | III | 48.14 | III | 53.89 | III |
| Lack of conviction in the new technology                | 65.71 | II  | 54.28 | II  | 59.99 | II  |
| Lack of Knowledge about Government Schemes              | 54.10 | IV  | 37.85 | IV  | 45.97 | IV  |

Source: Primary survey

**Shortage of skilled labour**

The data presented in the table vividly corroborate that "Shortage of labour" was expressed as the most important problem which was ranked the first rank by large growers with the MPS of 72.88 and ranked third by small growers with the MPS of

58.53. The next problem was "Non-availability of labour at peak operations" with the MPS of 59.71 by small growers and 67.85 by large growers and ranked second by both the categories of growers. The "High wage rate" Which was very high being beyond the paying capacity of marginal farmers was assigned the first rank by small growers with the MPS of 74.19 and fourth rank by large growers. Another problem was "Unavailability of technically sound labour" which was assigned the fourth rank by small growers with the MPS of 53.03 and third rank by large growers with the MPS of 65.53.

#### **Lack of proper road and transport facilities**

A Critical look at the table brings to focus that "Inefficient and costly transportation for the movement" was assigned the first rank by small growers with the MPS of 73.21 and third rank by large growers with the MPS of 51.42. The other problems like "Poor transportation infrastructure" and "Lack of metallic roads connected to orchards" were assigned a second and third rank by small growers With the MPS of 71.25 and 70.46 and first and second rank by large growers with the MPS of 68.57 and 62.96. Besides "Non-availability of transport in time" was also the last problem in the hierarchy and was assigned the fourth rank by all categories of small and large growers with the MPS of 68.75 and 42.50. Similar finds are in tune with the findings of (Ahmed, 2010; Ahmad and Ahmad, 2013; Bekele et al., 2016).

#### **Lack of finance**

One of the hesitant blocks for growers is the lack of capital. Credit facilities are very significant for the fruit growers, which are inadequate for growers to tide over the period between the time the fruit is harvested and sold. The possible cause of each of the financial problem was identified and ranked accordingly. The problem of "Documentation for the loan is difficult" and has given the first rank by small growers with the MPS of 69.14 and second rank by large growers with the MPS of 51.60. This problem was followed by "Non-Availability of the loan in time", Loan granted based on favouritism/preference", High-interest rate for the loan, and "requirement of security". The MPS of these problems were 67.46, 64.28, 57.32 and 56.78 respectively and ranked second, third, fourth and fifth by small growers while as, the MPS of these problems were 48.21, 44.46, 55.03 and 46.25 and assigned third, fifth, first and forth by large growers. Similar findings are also concerning the findings of (Farooq et al., 2016; Hemambara and Yogesh, 2014).

#### **Lack of packaging material**

"High cost of packaging material" was expressed as the most important problem by the small and large growers with MPS of 75 and 65.14 and ranked first by small growers and second by large growers. This problem was followed by "Shortage of wooden boxes and cardboard in time" with the MPS of 73.92 and 78.92 and ranked second by small growers and first by large growers. "Lack of packing facilities" and "packaging material is not of standard quality" are the other problems in apple marketing with the MPS of 72.50, 66.07 in small growers and 63.15, 50.21 in large growers and ranked third and fourth by both categories of respondents. Similar findings are in tune with (Naqash et al., 2017; Padder and Shanmugam, 2017).

#### **Lack of proper grading and standardisation**

Lack of proper grading facilities was expressed as the most vital problem faced by the small and large growers with MPS of 70.71 and 62.50 and ranked first by all categories of the respondents. This was followed by "Not aware of grading standards" and the MPS of this problem was 69.28 and 55.53 in small and large growers and ranked second by both categories of

growers. Whereas, "Not much price difference", "Lack of proper sorting and cleaning" was expressed as other problems with MPS of 64.28, 61.07 in small growers and 55, 58.03 in large growers and ranked third and fourth by small growers and vice-versa by large growers. Similar findings are in tune with the findings of (Kireeti and Sharma, 2017).

#### **Lack of proper information and market issues**

The data presented in the table vividly corroborate that "Lack of market information" was expressed as the most important problem by small and large growers with 71.42 and 63.57 MPS and ranked first by both the growers. The next important problem was "Lack of timely information" with MPS of 64.46 and 56.96 by small and large growers and ranked second by both categories of respondents. The "Misleading information" and "Lack of proper information about intermediaries, commission agents" was assigned the Third rank by small growers and fourth rank by large growers with the MPS of 56.96, 53.92 by small growers and 48.7, 51.07 by large growers.

#### **Lack of storage facilities**

An observation indicates that "Lack of cold storage and warehousing facilities" was expressed as a major problem with the highest intensity affecting the orchard development by both small and large growers with MPS of 81.78 and 80.35 respectively and given the first rank. The realization of this problem might be because of the unavailability of cold storage units for commercial purposes in the study area. The quantity that finds accommodation in the cold storage does not suffice the need of the growers. Another most important problem was "Inadequate storage facility" with MPS of 78.21 and 70.89 by small and large growers with the second rank because of this constraint most of the growers after harvesting the fruits especially apple fruit and store them in orchards where Spoilage is usually very high because of dampness, high warmth and humidity problem. This problem was followed by "Inadequate Cold chain capacities to serve the needs" and "High cost of storage" and the extent of these problems perceived by the small growers was 71.42, 66.60 whereas these problems perceived by large growers was 64.10, 67.85 respectively and the same rank was given by both categories of respondents.

#### **Lack of facility of processing**

The above table visualises that "Lack of Processing facilities" was perceived most important problem by the small and large growers with the MPS of 88.39 and 82.50 and ranked first by both categories of growers. The next important problem perceived by both Small and Large growers were "Unavailability of Modern processing units" with the extent of 60.35 and 55.35 MPS and given by the second rank. This was followed by "Poor infrastructure facilities connecting to processing units" which was expressed as a third most problem by small growers and fourth by large growers with the MPS of 57.14 and 51.42. The problem of "Low level of value-added because of lack of processing units" perceived by small growers by MPS of 54.28 whereas it is 49.28 in large growers.

#### **Malpractices in buying and selling of apples**

It is inferred from the above table that "Heavy fluctuations in the Mandi prices" was expressed as the most severe problem by the small and big growers with the MPS of 76.07 and 79.82 and were assigned the First rank. The other problems like "Deduct more charges" and "Part-payment" were assigned a second and third rank by small growers with the MPS of 75.42 and 72.85 and third and second rank by large growers with the MPS of 68.21 and 68.35.

However, "Do not take the consent of growers while selling the apple boxes", "Delay in payments" were next most severe problems as jointly expressed by respondents with the MPS of 66.96 and 62.23. Besides "Lack of transparency in pricing at local mandies" was also the last problem in the hierarchy of Malpractices and was assigned the last rank by all categories of growers with the MPS of 52.50 and 44.82

**Lack of quality standards**

The data incorporated in the above table reveals that "Unavailability of the trademark" was expressed most severe problem by small and large growers and were assigned the first rank by both the categories of growers with the MPS of 70.30 and 65.63. The "Level of quality standards to international markets is poor" was another problem perceived by both types of Growers and assigned the second rank with the Mean percentage Score of 53.75 and 49.35. "Poor hygiene and safety standards" and "Quality degradation is very high" were quite severe problems confronted by the respondents and ranked third and fourth by small growers with the MPS of 50.25 and 47.28 and the same problem is ranked by fourth and third by large growers with the MPS of 40.10 and 42.10.

**Lack of proper knowledge**

The data presented in the table clearly shows that problems related to "Lack of proper knowledge about post-harvest technologies" were assigned the first rank by small and large growers with the extent of 69.64 and 63.52 MPS respectively. The problem related to "lack of conviction in the new technology" was accorded the second rank with the MPS of 65.71 and 54.28. Further analysis of table reveals that the problems related to "Lack of knowledge about long-duration training", "Lack of knowledge about Government schemes" which was placed on third and fourth rank by small and large growers as jointly expressed by respondents with the MPS of 53.89 and 45.97 It was also observed that none of the respondents has obtained any degree or diploma in horticulture. Recent technology from horticulture field has not yet reached to the growers.

**COMPARISON OF MARKETING PROBLEMS PERCEIVED BY SMALL AND LARGE APPLE FRUIT GROWERS**

To find out the problems perceived by small and large apple fruit growers regarding apple fruit production, 'Z' test was applied and the following hypothesis was formed and tested:

**H<sub>0</sub>**:-There is no significant difference between small and large apple growers concerning marketing problems.

**H<sub>1</sub>**:- There is a significant difference between small and large apple growers concerning marketing problems.

**Table 2: Comparison of problems perceived in the Marketing of Apple by Growers**

| Categories of growers | Mean   | Standard Deviation | 'Z' Value |
|-----------------------|--------|--------------------|-----------|
| Small growers         | 152.19 | 32.59              | 14.004    |
| Large growers         | 99.92  | 22.32              |           |

\*= significant at 5 per cent level

The above table clearly shows that calculated 'Z' value 14.004 was found to be more than the tabulated value at 5 per cent level of significance concerning marketing problems. Therefore the Null hypothesis was rejected and the alternative hypothesis entitled "*There is a significant difference between small and large apple growers concerning Marketing Problems*" was accepted. Further analysis of the table shows that Small growers have higher mean value as compared to large growers. This reveals that small growers possessed more problems than large growers in the Marketing of apple fruit.

## **CONCLUSION**

The present study concluded that the major problem in apple marketing is inefficient handling and transportation; Poor technologies for storage, Lack of processing centres; Malpractices by middleman and poor infrastructure, Lack of Knowledge, Lack of Finance etc. The respondents who fall in the categories of small growers faced more problems as compared to those respondents who fall in the categories of large growers. These problems may be painstaking as the red signals for the orchardists in particular and the state government in general. To give a severe thought over the problems so that the required solution could be found out. Any more neglect in respect solution of these problems may result in serious problems. Thus Efforts are needed in the direction to capitalise on our strengths and remove problems to meet the goal of moving towards a horticulture lead growth in the state of Jammu and Kashmir and as well as in the country. Regulated marketing authorities should make a note of these problems of apple growers and they should arrange for proper facilities like transportation, storage, Packhouse and availability of proper packaging material at the proper time. Extension agency should work properly to educated growers regarding Grading, sorting and packing which may ensure better economic conditions for the people of the area by creating more job opportunities and income to the people.

## **RECOMMENDATIONS**

Based on the results, the following recommendations are suggested by the researcher:

### **Enhancement of grading and quality control act**

Grading and quality control Act should be executed which include the establishment of grade specification and enforcement of grading should be carried out by the best mechanical devices. To remove the traditional grading system mechanical grading devices need to be developed for this purpose. To ensure properly graded and quality fruit to the export markets, state grade and quality certification must be required for exports of fruits from the state.

### **Economic packing system**

An economic packing system for Apple should be developed and made easily available for all types of growers of the state. The Government should support for proving hygienic packaging material to the farmers at reasonable rates.

### **Improved marketing channel**

The use of a lengthy chain of middleman has to be reduced. The State Government should conduct regular inspection of markets and market surveys to study the various problems and situations. It will facilitate the regular supply of agricultural product at a reasonable price, which may be remunerative to the growers as well.



### **Cold storage facilities**

Cold Storage facility at least on tehsils level must be available to store and manage the disequilibrium in demand and supply of produce. There are only a few cold storage Houses in the whole state that are also under the private control and charges very high prices as compared to that cold storage that were situated in other places like in Delhi or Himachal Pradesh.

### **Establishment of processing unit's at large scale**

Apples can be used for making Apple Jam, Apple Juice and canned Apple. If the management is proper, the processing industry can be developed which will help not only in increasing revenues but at the same time will help to drive the economy as a whole.

### **Establishment of proper training institute**

Horticulture Marketing Training Institute should be established for training and education of personnel engaged in various activities of marketing Viz., Packing, grading, Sorting and standardization etc

### **Marketing fellowship**

State Government should give fellowship to young growers/traders to study marketing methods and administration in the advanced institutions of learning.

### **Minimum support price**

There is an urgent need to have remunerative support price for apple fruit so that growers will remain assured for reasonable return for their investment.

### **Availability of financial assistance**

Financial organisations may come forward to provide financial assistance to pre-harvest and post-harvest agents for minimizing their problems relating to finance. All fruit growers cannot be rich enough to spend their own money on Apple cultivation and marketing. Hence, it is suggested that the banks should introduce very flexible lending policies to cater to the financial needs of the Apple Growers.

### **Establishment of information centres**

Market information centres should be established Which will provide the apple fruit growers day to day information and Vital information on marketing, viz., demand, price, market, export etc.

### **Labour**

Shortage of labour and availability of labour, at a specific cost, seems to be a real problem in the study area. The grower-seller and agents should be trained to use modern technology machines and equipment to minimize their distress.

### **Proper branding**

There is a need to brand Kashmiri apple in such a way that the originality of fruit is traced from the Kashmiri region. This will help to get better returns and also avoid the Kashmiri name being misused by other states for selling their produce.

### **Proper connectivity of roads (Local Level)**

Lack of proper connectivity of the villages to the market was one of the major factor that constrained the export of fruit to the rest of the country. Apple is a perishable fruit and should reach the market before the quality gets deteriorated. The connectivity of Apple producing villages should be improved. Therefore, Proper connectivity of roads should be established at the major apple-producing villages


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