To study the resource management behaviour of pomegranate growers in respect of planning, procurement and utilization

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Abstract
The study entitled “Resource management behaviour of pomegranate growers in Washim District”. The study was conducted in two panchayat samities of Washim district in Vidarbha region of Maharashtra State. The district is located in the Vidarbha Region of Maharashtra, India. The present study was purposively conducted in Mangarulpir and Manora Panchayat samities in the Washim district on the basis of higher area under the cultivation of Pomegranate crop. The form of study was mainly to assess resource management behaviours of pomegranate growers. Hence, total 12 villages were selected from 2 panchayat samities. The respondents were selected from village by random sampling technique. 10 respondents were selected from each village. Thus 120 respondents were selected for the present study for making the sample size of 120 in total. Exploratory design of social research was used. The characteristics viz Education (0.233) source of information (0.229), were positively significant with procurement of resource of the respondents at 0.05% level of probability. The characteristics Land holding and irrigation facility were non significant and the characteristics Age (~0.312) was negatively significant with the procurement of resource of the respondents.

Experience in pomegranate cultivation (0.226), Training received (0.189), Management orientation (0.187), Education and annual income (0.182), size of orchard (0.180) and source of information (0.179), were positively significant with Utilization of resources of the respondents at 0.05% level of probability. It is observed that over half of majority (60.00%) of pomegranate growers have shown about managing the resources to moderate extent. Distribution pertaining to utilization of resources indicate that majority of the respondents (79.16%) have utilized resources for pomegranate cultivation to high extent.

Keywords: Resource management behavior, pomegranate growers, respect, planning, procurement, utilization

1. Introduction
Horticulture is a specialized branch of agriculture and significantly constitutes in the total agricultural production in India. Horticultural crops particularly fruits, have great export potential and can earn foreign exchange in the sizeable quantum. The economic aspects of fruit production are not less important. The well established and maintained orchards can offer better yields as compared to other orchids. During non bearing stage, it is possible to grow intercrop which compensate the expenses involve in establishment a fruit grower remains engaged for the whole year and there is an opportunity for full utilization of waste land in the arid and semi arid regions for getting higher income with minimum inputs. Fruit crops occupy an important place in the international trades. Fruits can earn handsome foreign exchange. Fruit orchard adds to the aesthetic beauty of the environment, they purify the air and decrease pollution. Fruit trees affect the rain and drought and they bring improvement of soil and help in checking the soil erosion.

Pomegranate (Punica granatum L.) belongs to family Punnnicaceae is one of the most favorite’s fruits of tropical and sub-tropical regions of the world. It is also known as Chinese apple or apple of Carthage (Hindi-Anar) Pomegranate is native to Iran (Persia) it is found from Kanyakumari to Kashmir, but it is cultivated commercially only in Maharashtra In India pomegranate is considered as a crop of the arid and semi arid regions because it withstands different soil and climatic stresses. It thrives best under hot dry summer and cold winter provided irrigation facilities are available.
The fruit is native of Ireland is extensively cultivated in Mediterranean countries like Spain, Egypt, Iran, Burma, Guinea and India. Pomegranate is grown in tropical and sub tropical regions of the World.

In Washim District area under pomegranate cultivation is more than 800 ha and among all Tahsil most area in Mangrulpir and Manora Tahsil

1.2 Objectives
The study was highly helpful to policy makers, research scientist and extension workers to formulate the strategy to increase socio economic condition of pomegranate growers. This study will reveal current status of knowledge and extent of adoption of improved pomegranate cultivation practices by the farmers. The present study entitled “Resource management behaviour of pomegranate growers in Washim District” was undertaken with the following specific objectives.

To study the resource management behaviour of pomegranate growers in respect of planning, procurement and utilization.

1.2 Methodology
The study entitled Resource management behaviour of pomegranate growers in Washim District was conducted in two panchayat samities of Washim district in Vidarbha region of Maharashtra State. The district is located in the Vidarabha Region of Maharashtra, India. The present study was purposively conducted in Mangrulpir and Manora Panchayat samities in the Washim district on the basis of higher area under the cultivation of Pomegranate crop. The form of present study was mainly to assess resource management behaviours of pomegranate growers. Hence, total 12 villages were selected from 2 panchayat samities.

The respondents were selected from village by random sampling technique. 10 respondents were selected from each village. Thus 120 respondents were selected for the present study for making the sample size of 120 in total. The exploratory design of social research was used in present investigation.

2. Resource management behavior
Various resources necessary for cultivation of pomegranate namely inputs, pre-requisites, capital, procurement resources and Utilization of resources were studied in respect of all the dimensions mentioned above. In other words a focused of the study was on how the pomegranate growers had planned, procured, and utilized resources required for pomegranate cultivation. The data collected on this aspects have been presented on subsequent heads.

2.1 Planning of resources

| Sr. No. | Resources/items                                      | Planned in advance | Planned in time | Not planned |
|--------|-----------------------------------------------------|--------------------|----------------|-------------|
| A      | Prerequisites                                       | No. %             | No. %          | No. %       |
| 1      | Soil testing                                        | 110 91.66         | 07 05.84       | 03 02.50    |
| 2      | Digging of trenches in north-south direction        | 116 96.66         | 04 03.34       | 00 00.00    |
| 3      | Selection of varieties for planting                | 120 100.00        | 00 00.00       | 00 00.00    |
| 4      | Digging of pits of size 60cm x 60cm x 60cm         | 113 94.16         | 07 05.84       | 00 00.00    |
| 5      | Planting time                                       | 112 93.33         | 08 06.67       | 00 00.00    |
| B      | Inputs                                              |                    |                |             |
| 1      | Hired human labours                                 | 00 00.00          | 114 95.00      | 06 05.00    |
| 2      | Bullock pairs                                       | 00 00.00          | 97 80.83       | 23 19.17    |
| 3      | Tractor                                             | 83 69.16          | 21 17.50       | 16 13.34    |
| 4      | Irrigation system                                   | 108 90.00         | 12 10.00       | 00 00.00    |
| 5      | Manures                                             | 23 19.17          | 97 80.83       | 00 00.00    |
| 6      | Fertilizers                                         | 102 85.00         | 18 15.00       | 00 00.00    |
| 7      | Plant protection measures                           | 28 23.34          | 92 76.66       | 00 00.00    |
| 8      | Growth hormones                                     | 21 17.50          | 99 82.50       | 00 00.00    |
| 9      | Farm shed                                           | 08 06.67          | 28 73.33       | 84 70.00    |
| 10     | Electric pump                                       | 120 100.00        | 00 00.00       | 00 00.00    |
| 11     | Wells                                               | 120 100.00        | 00 00.00       | 00 00.00    |
| 12     | Residential building on farms                       | 00 00.00          | 04 03.34       | 116 96.66   |

Table 1: Area under pomegranate crop in Washim district (Year 2015-16)

| S. No | Name of Taluka | Area (000) under Pomegranate cultivation | Area (000) under Production |
|-------|----------------|------------------------------------------|-----------------------------|
| 1     | Washim         | 90.00                                    | 45.00                       |
| 2     | Mangrulpir     | 180.00                                   | 135.00                      |
| 3     | Manora         | 200.00                                   | 152.00                      |
| 4     | Risod          | 90.00                                    | 40.00                       |
| 5     | Karanja        | 110.00                                   | 30.00                       |
| 6     | Malegaon       | 130.00                                   | 70.00                       |
| Total |                | 800.00                                   | 472.00                      |

(Source: S. A. O. Washim)

In Vidarabha day by day area under pomegranate cultivation increases in Yavatmal, Washim and, Amravati, district but highest area under pomegranate in Mangrulpir and Manora Tahsil of Washim districts.

Table 2: List of village wise respondents selected for the study

| Sr. No | Name of village | No. of respondents |
|--------|-----------------|--------------------|
| 1      | Wanoja          | 10                 |
| 2      | Sawargaon       | 10                 |
| 3      | Kavthal         | 10                 |
| 4      | Mangrulpir      | 10                 |
| 5      | Kasola          | 10                 |
| 6      | Mangalsasa      | 10                 |
| 7      | Jamdara         | 10                 |
| 8      | Parva           | 10                 |
| 9      | Javala          | 10                 |
| 10     | Mohagavan       | 10                 |
| 11     | Amdari          | 10                 |
| 12     | Hatti           | 10                 |
| 13     | Total           | 120                |

Table 3: Distribution of the respondents according to their extent of planning resources

| Sr. No | Resources/items                                      | Planned in advance | Planned in time | Not planned |
|--------|-----------------------------------------------------|--------------------|----------------|-------------|
|        |                                                     | No. %             | No. %          | No. %       |
| A      | Prerequisites                                       |                    |                |             |
| 1      | Soil testing                                        | 110 91.66         | 07 05.84       | 03 02.50    |
| 2      | Digging of trenches in north-south direction        | 116 96.66         | 04 03.34       | 00 00.00    |
| 3      | Selection of varieties for planting                | 120 100.00        | 00 00.00       | 00 00.00    |
| 4      | Digging of pits of size 60cm x 60cm x 60cm         | 113 94.16         | 07 05.84       | 00 00.00    |
| 5      | Planting time                                       | 112 93.33         | 08 06.67       | 00 00.00    |
| B      | Inputs                                              |                    |                |             |
| 1      | Hired human labours                                 | 00 00.00          | 114 95.00      | 06 05.00    |
| 2      | Bullock pairs                                       | 00 00.00          | 97 80.83       | 23 19.17    |
| 3      | Tractor                                             | 83 69.16          | 21 17.50       | 16 13.34    |
| 4      | Irrigation system                                   | 108 90.00         | 12 10.00       | 00 00.00    |
| 5      | Manures                                             | 23 19.17          | 97 80.83       | 00 00.00    |
| 6      | Fertilizers                                         | 102 85.00         | 18 15.00       | 00 00.00    |
| 7      | Plant protection measures                           | 28 23.34          | 92 76.66       | 00 00.00    |
| 8      | Growth hormones                                     | 21 17.50          | 99 82.50       | 00 00.00    |
| 9      | Farm shed                                           | 08 06.67          | 28 73.33       | 84 70.00    |
| 10     | Electric pump                                       | 120 100.00        | 00 00.00       | 00 00.00    |
| 11     | Wells                                               | 120 100.00        | 00 00.00       | 00 00.00    |
| 12     | Residential building on farms                       | 00 00.00          | 04 03.34       | 116 96.66   |
Majority of the respondents were deciding well in advance for the selection of varieties for planting (100.00%), digging of trenches in north south direction (96.66%), digging of pits size 60x60x60cm (94.16%), planting time (93.33%) and soil testing (91.66%). The data presented in Table in respect of inputs resources, indicate that majority of the respondents decided and planned well in advance for Electric pump and well (100.00%) Irrigation system (90.00%) fertilizer (85.00%) and Tractor (69.16%). Majority of the respondents were deciding well in advance for the hiring of bullock pairs (93.33%) amount for harvesting of pomegranate fruits (90.00%) amount for hiring tractor (93.33%) amount for purchasing manure (93.33%) amount for purchasing FYM (72.50%) Two-third of the respondents decided planned in time amount for hired labour (70.00%) Majority of the respondents had not planned to keep the amount for purchasing land, purchasing pomegranate guard, and Amount for transportation of pomegranate fruits to processing Industry (100.00%), and for hiring bullock pairs (82.50%)  

| Sl. No. | Category                                      | Respondents (n=120) |
|--------|----------------------------------------------|---------------------|
|        | Frequency | Per cent |
| 1      | Low (Up to 33.33) | 38 | 31.66 |
| 2      | Medium (33.33 to 66.66) | 60 | 50.00 |
| 3      | Large (Above 66.67) | 22 | 18.34 |
|        | Total     | 120 | 100.00 |

It is apparently from Table 4 that half of the respondent (50.00%) of pomegranate growers planned moderately the resources where as few of them planned at low (31.66%) and high level (18.34%) their resources. It could thus be inferred that majority of the respondents planned their resources moderately.

### 2.2 Procurement of resources

#### 2.2.1 Availability of resource

| Sr. No. | Resources/items                                      | Completely available | Partially available | Not available |
|---------|-----------------------------------------------------|----------------------|---------------------|---------------|
| 1       | Land                                                | 120 100              | 00                  | 00.00 00.00   |
| 2       | Capital                                             | 11 09.17             | 109                   | 90.83 00.00   |
| 3       | Varieties of planting                               | 112 93.33            | 08 06.67             | 00.00 00.00   |
| 4       | Tractor                                             | 24 20.00             | 96 80.00             | 00.00 00.00   |
| 5       | Bullock pairs                                       | 97 80.83             | 23 19.17             | 00.00 00.00   |
| 6       | Labours                                             | 31 25.84             | 89 74.16             | 00.00 00.00   |
| 7       | Well / Bore well                                    | 116 96.66            | 00 00.00             | 04 03.34     |
| 8       | Electricity                                         | 107 89.16            | 13 10.84             | 00.00 00.00   |
| 9       | Electric motor/wire                                 | 120 100              | 00 00.00             | 00.00 00.00   |
| 10      | Pump sets                                           | 120 100              | 00 00.00             | 00.00 00.00   |
| 11      | Drip set                                            | 113 94.16            | 07 05.84             | 00.00 00.00   |
| 12      | Water harvester                                     | 35 29.17             | 00 00.00             | 85 70.83     |
| 13      | Manures                                             | 16 13.34             | 104 86.66            | 00.00 00.00   |
| 14      | Fertilizers                                         | 120 100              | 00 00.00             | 00.00 00.00   |
| 15      | Bordeaux paste                                      | 120 100              | 00 00.00             | 00.00 00.00   |
| 16      | Insecticides / Fungicides                           | 120 100              | 00 00.00             | 00.00 00.00   |
| 17      | Growth hormones                                     | 108 90.00            | 12 10.00             | 00.00 00.00   |
| 18      | Micro-nutrients                                     | 112 93.33            | 08 06.67             | 00.00 00.00   |
| 19      | Sprayer / duster                                    | 120 100              | 00 00.00             | 00.00 00.00   |
| 20      | Implements for inter culture operation              | 108 90.00            | 12 10.00             | 00.00 00.00   |
It is observed from table 5 that equal majority of the respondents were having complete available resources viz. land, electric motor /wire pump set, fertilizer. Bordeaux paste, insecticide/fungicide and sprayer/ duster (100.00%), well/bore well (96.66%), drip set (94.16%), varieties of planting and micronutrients (93.33%), growth hormones, implements for intercultural operation and technology for taking pomegranate in first year of plantation (90.00%). Majority of the respondents were having partial availability of pomegranate guard (100.00%) capital (90.83%), manures (86.66%) and marketing facility (81.66%) and nearly two third of the respondents (80.00%) having partially availability of tractor and transportation facility.

2.2.2 Quantity of resource

| Sr. No. | Resources/items                              | Completely procured | Partially procured | Not procured |
|---------|---------------------------------------------|----------------------|--------------------|--------------|
| 1       | Land                                        | 00 00.00 00 00.00    | 00 120.00 100      |
| 2       | Capital                                     | 80 65.00 20 19.16    | 23 07.50           |
| 3       | Varieties of planting                       | 120 100 00 00.00    | 00 00.00           |
| 4       | Tractor                                     | 00 00.00 96 80.00    | 24 20.00           |
| 5       | Bullock pairs                               | 00 00.00 13 10.87    | 107 89.16          |
| 6       | Labours                                     | 31 25.83 72 60.00    | 17 14.17           |
| 7       | Well / Bore well                            | 04 03.34 00 00.00    | 116 96.66          |
| 8       | Electricity                                 | 120 100 00 00.00    | 00 00.00           |
| 9       | Electric motor/wire                         | 00 00.00 00 00.00    | 120 100            |
| 10      | Pump sets                                   | 22 18.34 00 00.00    | 98 81.66           |
| 11      | Drip set                                    | 108 90.00 12 10.00   | 00 00.00           |
| 12      | Water harvester                             | 00 00.00 35 29.17    | 85 70.83           |
| 13      | Manures                                    | 48 40.00 72 60.00    | 00 00.00           |
| 14      | Fertilizers                                 | 98 81.66 22 18.34    | 00 00.00           |
| 15      | Bordeaux paste                              | 102 85.00 18 15.00   | 00 00.00           |
| 16      | Insecticides / Fungicides                   | 113 94.16 07 05.87   | 00 00.00           |
| 17      | Growth hormones                             | 42 35.00 78 65.00    | 00 00.00           |
| 18      | Micro-nutrients                             | 57 47.50 63 52.50    | 00 00.00           |
| 19      | Sprayer / duster                            | 23 19.17 00 00.00    | 97 80.83           |
| 20      | Implements for inter culture operation     | 112 93.33 08 06.67   | 00 00.00           |
| 21      | Implements for pomegranate fruits harvesting| 00 00.00 00 00.00    | 120 100            |
| 22      | Marketing facilities                        | 22 18.34 98 81.66    | 00 00.00           |
| 23      | Transporting facilities                      | 24 20.00 96 80.00    | 00 00.00           |
| 24      | Availability pomegranate processing industry| 00 00.00 00 00.00    | 120 100            |
| 25      | Pomegranate guard                           | 00 00.00 21 17.43    | 99 82.57           |
| 26      | Technology for taking pomegranate in first year of plantation | 67 55.83 53 44.17 | 00 00.00 |

It is observed from table 6 that majority of the respondents had completely procured varieties of planting, and electricity (100.00%) ,Insecticide fungicide (94.16%), Implements for intercultural operation (93.33%), drip set 90.00 per cent and nearly half of the respondents capital (65.00%) and technology for taking pomegranate in first year of plantation (55.83%). Majority of the respondents had partial marketing facilities, (81.66%) Tractor and transportation facilities (80.00%), labour and manure (60.00%), growth hormones (65.00%) and half of the respondents partially procured micronutrients (52.50%).
2.2.3 Time of resources

Table 7: Distribution of the respondents according to their extent of Time of resources

| Sr. No. | Resources/items                          | Procured well in advance | Procured in time | Not procured |
|---------|-----------------------------------------|--------------------------|------------------|--------------|
|         |                                         | No | %   | No | %   | No | %   | No | %   | No | %   | No | %   |
| 1       | Land                                    | 00 | 00.00 | 00 | 00.00 | 120 | 100 |
| 2       | Capital                                 | 113 | 94.16 | 07 | 05.84 | 00 | 00.00 |
| 3       | Varieties of planting                   | 116 | 96.66 | 04 | 03.34 | 00 | 00.00 |
| 4       | Tractor                                 | 00 | 00.00 | 96 | 80.00 | 24 | 20.00 |
| 5       | Bullock pairs                           | 96 | 80.00 | 13 | 10.84 | 00 | 00.00 |
| 6       | Labours                                 | 23 | 19.17 | 97 | 80.83 | 00 | 00.00 |
| 7       | Well / Bore well                        | 00 | 00.00 | 00 | 00.00 | 120 | 100 |
| 8       | Electricity                             | 116 | 96.66 | 04 | 03.34 | 00 | 00.00 |
| 9       | Electric motor/wire                     | 120 | 100  | 00 | 00.00 | 00 | 00.00 |
| 10      | Pump sets                               | 22 | 18.34 | 00 | 00.00 | 98 | 81.66 |
| 11      | Drip set                                | 108 | 90.00 | 00 | 00.00 | 12 | 10.00 |
| 12      | Water harvester                         | 00 | 00.00 | 00 | 00.00 | 120 | 100 |
| 13      | Manures                                 | 26 | 21.67 | 94 | 78.33 | 00 | 00.00 |
| 14      | Fertilizers                             | 05 | 04.17 | 115 | 95.63 | 00 | 00.00 |
| 15      | Bordeaux paste                          | 06 | 05.00 | 114 | 95.00 | 00 | 00.00 |
| 16      | Insecticides / Fungicides               | 08 | 06.67 | 112 | 93.33 | 00 | 00.00 |
| 17      | Growth hormones                         | 27 | 22.50 | 93 | 77.50 | 00 | 00.00 |
| 18      | Micro-nutrients                         | 31 | 25.84 | 89 | 74.16 | 00 | 00.00 |
| 19      | Sprayer / duster                        | 118 | 98.33 | 02 | 01.67 | 00 | 00.00 |
| 20      | Implements for inter culture operation  | 117 | 97.50 | 03 | 02.50 | 00 | 00.00 |
| 21      | Implements for pomegranate fruits harvesting | 00 | 00.00 | 00 | 00.00 | 120 | 100 |
| 22      | Marketing facilities                    | 22 | 18.34 | 98 | 81.66 | 00 | 00.00 |
| 23      | Transporting facilities                 | 97 | 80.83 | 23 | 19.17 | 00 | 00.00 |
| 24      | Availability pomegranate processing industry | 00 | 00.00 | 00 | 00.00 | 120 | 100 |
| 25      | Pomegranate guard                       | 00 | 00.00 | 18 | 15.00 | 112 | 93.33 |
| 26      | Technology for taking pomegranate in first year of plantation | 120 | 100 | 00 | 00.00 | 00 | 00.00 |

It is observed from table 7 that majority of the respondents well in advance, procured the resources were electric motor wire, Technology for taking pomegranate in first year of plantation (100.00%), Speyer / duster (98.33%), implements for intercultural operation (97.50%), varieties of planting and electricity (96.66%), capital (94.16%), drip set (90.00%) and transporting facilities (80.83%).

Majority of the respondents had timely procured The resources viz. fertilizer (95.63%), insecticide / fungicide (93.33%) marketing facility (81.66), labour (80.83%) and tractor (80.00%) only three forth of the respondents for manure (78.33%), growth hormones (77.50%) and micronutrients (74.16%) procured in time very less number of respondents transporting facilities, (19.17%), pomegranate guard (15.00%), capital (5.84%) and variety of planting and electricity (3.34%) respondents procured in times.

Majority of the respondents had not procured the resources in time were land, well, bore well, water harvester, implements for pomegranate fruit harvesting and pomegranate processing industries (100.00%). Most of the respondents not procured pomegranate guard (93.33%), pump set (81.66%) and bullock pair (80.00%).

2.2.4 Place of resources

It is observed from table 7 Majority of the respondents were having availability of the resources on actual field were bullock pairs, labours, well / tube-well and electricity (100.00%), pump set and transporting facility (81.66%), manures (78.33%) less numbers of respondents having water harvester (29.16%), tractor (20.00%), drip set (10.00%) available on actual field. Only (11.16%) of the respondents procured varieties of the planting from government.

Majority of the respondents were procuring the resources from the market on the basis of their availability in market, were electric motor / wire, fertilizer, Bordeaux paste, insecticide / fungicide, growth hormones, micro nutrients, sprayer / duster, implements for intercultural operation, marketing facility, pomegranate guard and technology for taking pomegranate in first year of plantation (100.00%) and varieties of planting (88.33%), tractor (80.00%),drip set (90.00%) also on the basis of availability they procured from market.
Majority of the respondents not availability of implements for pomegranate fruit harvesting and no processing industries (100.00%) and (70.84%) respondents having no availability of water harvester.

Besides conducting study of procurement for various resources, level of procurement as a whole for the resources were worked out and presented in table 8.

Table 8: Distribution of the respondents according to their extent of Place of resources

| Sl. No | Resources/items                      | Available on own actual Field | Available in / NGOs | Available in Market | Not available Govt |
|-------|--------------------------------------|-------------------------------|---------------------|---------------------|---------------------|
| 1     | Varieties of planting                | No 00.00                      | 14.00               | 11.67               | 106.00              |
| 2     | Tractor                              | 24.00                         | 96.00               | 00.00               | 00.00               |
| 3     | Bullock pairs                        | 120.00                        | 00.00               | 00.00               | 00.00               |
| 4     | Labours                              | 00.00                         | 00.00               | 00.00               | 00.00               |
| 5     | Well / Bore well                     | 120.00                        | 00.00               | 00.00               | 00.00               |
| 6     | Electricity                          | 120.00                        | 00.00               | 00.00               | 00.00               |
| 7     | Electric motor/wire                  | 00.00                         | 00.00               | 00.00               | 00.00               |
| 8     | Pump sets                            | 98.00                         | 22.00               | 18.34               | 00.00               |
| 9     | Drip set                             | 10.00                         | 108.00              | 90.00               | 00.00               |
| 10    | Water harvester                      | 35.00                         | 00.00               | 00.00               | 85.00               |
| 11    | Manures                              | 94.00                         | 26.00               | 21.67               | 00.00               |
| 12    | Fertilizers                          | 00.00                         | 100.00              | 00.00               | 00.00               |
| 4     | Bordeaux paste                       | 00.00                         | 100.00              | 00.00               | 00.00               |
| 14    | Insecticide/ Fungicides              | 00.00                         | 00.00               | 00.00               | 00.00               |
| 15    | Growth hormones                      | 00.00                         | 00.00               | 00.00               | 00.00               |
| 16    | Micro-nutrients                      | 00.00                         | 00.00               | 00.00               | 00.00               |
| 18    | Sprayer / duster                     | 00.00                         | 00.00               | 00.00               | 00.00               |
| 19    | Implements for inter culture operation | 00.00                   | 120.00              | 00.00               | 00.00               |
| 20    | Marketing facilities                 | 00.00                         | 120.00              | 00.00               | 00.00               |
| 21    | Transporting facilities              | 98.00                         | 22.00               | 18.34               | 00.00               |
| 22    | Availability pomegranate processing industry | 00.00             | 00.00               | 00.00               | 00.00               |
| 23    | Pomegranate guard                    | 00.00                         | 00.00               | 00.00               | 00.00               |
| 24    | Technology for taking pomegranate in first year of plantation | 00.00              | 00.00               | 00.00               | 00.00               |

It is obvious from table 9 that more than half (58.33%) majority of pomegranate growers procured resources moderately however, the remaining about nearly equal per cent of them found to be in a high (23.33%) and low (18.34%) category of procurement of resources. Besides conducting study of procurement for various resources, level of procurement as a whole for the resources were worked out and presented in table 8.

Table 9: Distribution of the respondents according to their procurement resources

| Sl. No | Category            | Respondents (n=120) |
|-------|---------------------|---------------------|
|       |                     | Frequency | Per cent |
| 1     | Low (Up to 33.33)   | 22        | 18.34    |
| 2     | Medium (33.33 to 66.66) | 70    | 58.33    |
| 3     | Large (Above 66.67) | 28        | 23.33    |
| Total |                     | 120       | 100.00   |

Table 10: Distribution of the respondents according to their extent of Utilization of resources

| Sl. No | Resources/items | Completely utilized | Partially utilized | Not utilized |
|-------|-----------------|---------------------|--------------------|--------------|
| 1     | Land            | 00                  | 120                | 00           |
| 2     | Capital         | 82                  | 38                 | 31.67        |
| 3     | Varieties of planting | 120 | 100             | 00            | 00          |
| 4     | Tractor         | 26                  | 94                 | 78.33        |
| 5     | Bullock pairs   | 98                  | 13                 | 10.84        |
| 6     | Labours         | 108                 | 07                 | 05.84        |
| 7     | Well / Bore well| 120                 | 00                 | 00           |
| 8     | Electricity     | 120                 | 00                 | 00           |
| 9     | Electric motor/wire | 120     | 00             | 00           |
| 10    | Pump sets       | 120                 | 00                 | 00           |
| 11    | Drip set        | 120                 | 00                 | 00           |
| 12    | Water harvester | 22                  | 10                 | 10.84        |
| 13    | Manures         | 79                  | 41                 | 34.17        |
| 14    | Fertilizers     | 93                  | 27                 | 22.50        |
| 15    | Bordeaux paste  | 78                  | 42                 | 35.00        |
| 16    | Insecticides / Fungicides | 91    | 29             | 24.17        |
It is observed from table 10 majority of the respondents had completely utilized the resources were varieties of planting, well, electricity, electric motor / wire, pump sets, drip sets, sprayer / duster and Technology for taking pomegranate in first year of plantation (100.00%), implements for intercultural operation (95.00%), labour (90.00%), micro nutrient, bullock pair and marketing facilities (81.66%), transportation facility (80.00%).

About two third of the respondents completely used fertilizer (77.50%) insecticide / fungicide (75.83%) and capital (68.33%). More than half of the respondents completely utilized the resources manure (65.83%) Bordeaux pest (65.00%) and growth hormones (52.50%). Majority of the respondents had partially utilized land (100.00%), tractor (78.33%) and less no of growth hormones (47.50%) Majority of the respondents were not utilized the Implements for pomegranate fruits harvesting and pomegranate processing industry (100.00) because no availability of these resources.

Besides conducting study of utilization for various resources, level of utilization as a whole for the resources were worked out and presented in table 11

Table 11: Distribution of the respondents according to their utilization resources

| Sl. No. | Category                  | Respondents (n=120) | Frequency | Per cent |
|---------|---------------------------|---------------------|-----------|----------|
| 1       | Low (Up to 33.33)         | 10                  | 08.33     |
| 2       | Medium (33.33 to 66.66)   | 15                  | 12.50     |
| 3       | Large (Above 66.67)       | 95                  | 79.16     |
| Total   |                           | 120                 | 100.00    |

It is observed from the table 11, it was revealed over three fourth of the majority (79.16%) have utilized resources for pomegranate cultivation to high extent where as few of the them at medium (15.50%) and low (8.33%) their resources.

2.4 Resource management behaviour level of respondents

Resource management behaviour of pomegranate growers was studied on three dimensions namely planning, procurement and utilization, summation of all these dimensions had indicated the overall Resource management behaviour.

Table 12: Distribution of the respondents according to their Resource management behaviour

| Sl. No. | Category                  | Respondents (n=120) | Frequency | Per cent |
|---------|---------------------------|---------------------|-----------|----------|
| 1       | Low (Up to 33.33)         | 12                  | 10.00     |
| 2       | Medium (33.33 to 66.66)   | 72                  | 60.00     |
| 3       | Large (Above 66.67)       | 36                  | 30.00     |
| Total   |                           | 120                 | 100.00    |

It is observed from table 12, it is revealed that over half of majority (60.00%) of pomegranate growers have shown about managing the resources to moderate extent, where as, one fourth of them found to be in high (30.00%) and low (10.00%) category of resource management behaviour.

2.5 Summary and Conclusion

2.5.1 Resource management behaviour of pomegranate growers

2.5.1.1 Planning of resources

a. Pre requisites: Majority of respondents decided well in advance the selection of varieties for planting (100.00%).

b. Inputs: Majority of the respondents decided planned in advance the Electric pump and well (100.00%) Irrigation system (90.00%) fertilizer (85.00%) and Tractor (69.16%).

c. Capital: Majority of respondents decided well in advanced amount for purchasing planting material (81.66%), followed by (93.33%) the respondent decided planned in time the purchasing of manure.

d. Distribution of the respondents according to their level planning resources indicates that half of the respondent (50.00%) of pomegranate growers planned moderately the resources.

2.5.1.2 Procurement of resources

a. Availability of resource: Equal majority of the respondents having completely available resources, followed by partial availability of resources and majority of the respondents not available of pomegranate processing industries and implements for pomegranate fruit harvesting.

b. Quantity of resource: Majority of the respondents completely procured varieties of planting, and electricity (100.00%), followed by partial procurement in marketing facilities, (81.66%) Tractor and transportation facilities (80.00%) and majority of the respondents not procured resources like land and electric motor wire (100.00%).

c. Time of resource: Majority of the respondents not procured resources like land, well, bore well, water harvester, implements for pomegranate fruit harvesting and pomegranate processing industries (100.00%).

d. Place of resources: Less of the respondents having availability of the resources on actual field were bullock pairs, labours, well / tube-well and electricity (100.00%), followed by Majority of the respondents procured resources from market on the basis of their availability in market.

e. Distribution of the respondents according to their procurement resources

f. Indicate that more than half (58.33%) of pomegranate growers procured resources moderately.

2.5.1.3 Utilization of resources

Distribution pertaining to utilization of resources indicate that majority of the respondents (79.16%) have utilized resources for pomegranate cultivation to high extent.
2.5.1.4 Resource management behaviour level of respondents

It is observed that over half of majority (60.00%) of pomegranate growers have shown about managing the resources to moderate extent.

3. Implications

Majority of the of the respondents procure resources moderately, there is a wide scope to achieve higher level of procurement of resources it is necessary to involved farmers in a method demonstration of recent resources and technology for realization This is matter of concern to draw attention of various extension and developmental agencies for taking various programmes at gross root level

Majority of the respondent manage the resources up to moderate extents resource management is prerequisite for planning procurement and use of any farm management inadequate resource certainly affect management They are required to the fully equipped with all resources therefore extension agency may organized demonstration and seminars so as to convince the farmer about important aspects of cultivation of pomegranate

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