National Mission on Saffron in J&K State
HISTORICAL BACKGROUND

Saffron Cultivation in Kashmir Valley dates back to 500 BC Wan Zhen a Chinese Medical Expert reports that habitat of saffron is in Kashmir. However historians date its arrival prior to 500B.C attributing it to Persian invasion and colonization of Kashmir.
**Scenario**

- Saffron production in Jammu and Kashmir State had been under threat of extinction as is evident from its dwindling share in global production. Area under Saffron Production has declined from about 5707 hectares to 3715 hectares from in 2009-10.
- Simultaneously productivity had declined from an average of 3.13 Kg/ha to 1.88 kgs/ha over the years before 2010.
- Saffron cultivation is being persuade by more than 30000 families in J&K located in 226 villages.
- Jammu & Kashmir is the 2nd largest Saffron producing area in the world and is only state in the country where saffron is being cultivated.
The production system previously followed in Jammu and Kashmir State was the main constraint responsible for the lower productivity of Saffron. In Iran and Spain, farmers use the Pluriannual method of cultivation, under which Saffron plants are left in the soil for two consecutive years, after which corms are removed from the field for fresh plantation. Graded corms weighing 8 gm and above are preferred for new plantations. Corms are irrigated during the months of September and October using sprinkler technology which ensures timely corm sprouting and good flower yields. Saffron is dried using toasters/electrical dryers/vacuum dryers, which enhances the quality of Saffron.
Past trend in area, production and productivity of saffron
SAFFRON
(Crocus sativus)

KASHMIR
HERITAGE
CROP
- *Crocus Sativus* (saffron) is a legendary spice of Kashmir.
- 30,000 farm operating families are dependent on Saffron cultivation.
- Area under cultivation declined from 5707 hectares to 3715 hectares as on 2010-11.
• Initiative for economic revival of J&K Saffron under National Mission on Saffron (RKVY) was introduced during 2010-11
• An area of 3715 hectares of saffron was proposed to be rejuvenated under the mission.
Why Saffron Mission

• Area declined from 5707 hectares to 3715 hectares in 2010-11
• Low productivity of saffron (1.88 Kg/ha)
• Orthodox cultivation methods
• Biotic and abiotic stresses, poor plant stand, change in weather pattern over the years
**Past trend in area, production and productivity of saffron**

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (In Ha)</th>
<th>Production (In Mts)</th>
<th>Yield (Kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996-97</td>
<td>5707</td>
<td>15.95</td>
<td>2.80</td>
</tr>
<tr>
<td>1997-98</td>
<td>4618</td>
<td>13.39</td>
<td>2.90</td>
</tr>
<tr>
<td>1998-99</td>
<td>4116</td>
<td>12.88</td>
<td>3.13</td>
</tr>
<tr>
<td>1999-2000</td>
<td>3997</td>
<td>7.65</td>
<td>1.89</td>
</tr>
<tr>
<td>2000-2001</td>
<td>2831</td>
<td>3.59</td>
<td>1.27</td>
</tr>
<tr>
<td>2001-2002</td>
<td>2713</td>
<td>0.30</td>
<td>0.095</td>
</tr>
<tr>
<td>2002-03</td>
<td>2825</td>
<td>6.50</td>
<td>2.28</td>
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<tr>
<td>2003-04</td>
<td>2742</td>
<td>5.15</td>
<td>1.88</td>
</tr>
<tr>
<td>2004-05</td>
<td>3143</td>
<td>6.86</td>
<td>2.23</td>
</tr>
<tr>
<td>2005-06</td>
<td>3010</td>
<td>6.50</td>
<td>2.15</td>
</tr>
<tr>
<td>2006-07</td>
<td>3280</td>
<td>8.20</td>
<td>2.50</td>
</tr>
<tr>
<td>2007-08</td>
<td>3280</td>
<td>7.70</td>
<td>2.34</td>
</tr>
<tr>
<td>2008-09</td>
<td>3715</td>
<td>9.462</td>
<td>2.50</td>
</tr>
<tr>
<td>2009-2010</td>
<td>3715</td>
<td>10.40</td>
<td>2.75</td>
</tr>
<tr>
<td>Year</td>
<td>Rejuvenated under NSM</td>
<td>Cumulative Total</td>
<td>Average yield/ha</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------</td>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>2010-11</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2011-12</td>
<td>331</td>
<td>331</td>
<td>4.5</td>
</tr>
<tr>
<td>2012-13</td>
<td>943</td>
<td>1274</td>
<td>4.5</td>
</tr>
<tr>
<td>2013-14</td>
<td>528</td>
<td>1802</td>
<td>4.5</td>
</tr>
<tr>
<td>2014-15</td>
<td>157</td>
<td>1959</td>
<td>1.5</td>
</tr>
<tr>
<td>2015-16</td>
<td>176.00</td>
<td>2135.00</td>
<td>5.5</td>
</tr>
<tr>
<td>2016-17</td>
<td>79.81</td>
<td>2214.81</td>
<td>5.49</td>
</tr>
<tr>
<td>2017-18</td>
<td>172.90</td>
<td>2387.71</td>
<td>1.64*</td>
</tr>
<tr>
<td>2018-19</td>
<td>74.29</td>
<td>2462.00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td><strong>2462</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PARTNERS IN THE PROJECT

• Directorate of Agri. Kashmir/ Jammu
• Central Institute of Temperate Horticulture (CITH)
• SKUAST-K
• National Horticulture Board (NHB)
• Mechanical Engineering Department / Horticulture Planning & Marketing.
Objectives of the Mission

• To make vertical and horizontal improvement in the overall production of saffron
• To enhance quality of saffron
• To enhance research and extension capabilities,
• To develop appropriate systems for organized marketing, quality-based pricing of saffron and for formulating direct transactions between growers, traders, exporters and industrial agencies.
COMPONENTS OF NATIONAL SAFFRON MISSION

- Rejuvenation/Replanting of existing saffron area for improving productivity (75% GOI SHARE)
- Support for creation of irrigation facilities GOI SHARE 100% (Tube wells & their harnessing), 50% (SPRINKLER).
- Production of planting Material (Public Sector Nurseries) 100% GOI SHARE
- Support for creation of irrigation facilities GOI SHARE 100% (Tube wells & their harnessing) 50% (SPRINKLER)
COMPONENTS OF NATIONAL SAFFRON MISSION

- Enhancing product quality through improved post harvest handling 50% GOI SHARE
- Mechanization 50% GOI SHARE
- Infrastructure development of public farms 100% GOI SHARE
- Weather Station/e-trading/spot exchange/Quality testing/and ISO certification 100% GOI SHARE
- Transfer of technologies and Human Resource Development (HRD) 100% GOI SHARE
FINANCIAL DETAILS OF PROJECT

- Total Project cost: Rs.400.11 Cr.
- Sanctioned Project Cost: Rs.400.11 Cr.
- Govt. of India Share: Rs.315.99 Cr.
- Farmers share: Rs.84.12 Cr.
- Period: 9 years (2010-2020)
- Funds released so far: Rs.235.69 Cr.
- Expenditure as on date: Rs.231.101 Cr.
Major Achievements during 2010-11

- 80 Vermi Compost Units established on 50% subsidy.
- 19 Demonstration Plots laid on 100% assistance.
Major Achievements during 2011-12

- 330.95 hectares rejuvenated under the mission.
- Corm multiplication taken up over an area of 15.5 hectares in public sector.
- 360 Vermi Compost Units have been established on 50% subsidy.
- 100 Demonstrations have been laid in the farmers field.
- 163 Hot Air Dryers distributed on 50% subsidy.
- 66 Weeders distributed to farmers on 50% subsidy.
- 02 Tractors distributed on 50% subsidy.
- 02 Tube Wells constructed.
- 01 Corm handling/Storage Unit established.
Major Achievements during 2012-13

- 944 hectares rejuvenated under the mission.
- Corm multiplication taken up over an area of 20 hectares in public sector.
- 104 Vermi Compost Units have been established on 50% subsidy.
- 50 Demonstrations have been laid in the farmers field.
- 08 Weeders distributed to farmers on 50% subsidy.
- 01 Tractor distributed on 50% subsidy.
- 49 Tube Wells constructed.
- 01 Corm handling/Storage Unit established.
Major Achievements during 2013-14

- 528 hectares rejuvenated under the mission.
- Corm multiplication taken up over an area of 9 hectares in public sector.
- 51 Vermi Compost Units have been established on 50% subsidy.
- 31 Demonstrations have been laid in the farmers field.
- 91 Collection Sumps constructed.
- 28 Sprinkler Sets installed in public sector.
- 38 Weeders distributed to farmers on 50% subsidy.
- 01 Tractor distributed on 50% subsidy.
- 18 Tube Wells constructed.
Major Achievements during 2014-15

- 165.735 hectares rejuvenated under the mission.
- Corm multiplication taken up over an area of 3.3 hectares in public sector.
- 163 Vermi Compost Units have been established on 50% subsidy.
- 48 Weeders distributed to farmers on 50% subsidy.
- 26 Tube Wells constructed.
Major Achievements during 2015-16

- 175.71 hectares rejuvenated under the mission.
- 62 Weeders distributed to farmers on 50% subsidy.
- 02 Tube Wells constructed
- 02 Sprinkler Sets installed in Public Sector.
- 16 Collection Sumps constructed.
- 60 Hot Air Dryers distributed on 50% subsidy.
Major Achievements during 2016-17

- 83 hectares rejuvenated under the mission.
- 275 Weeders distributed to farmers on 50% subsidy.
- 09 Sprinkler Sets installed in Public Sector.
- 08 Collection Sumps constructed.
Major Achievements during 2017-18

- 173.25 hectares rejuvenated under the mission.
- 04 Sprinkler Sets installed in Public Sector.
- 12 Collection Sumps constructed.
- 10 Production Wells
- 28 Weeders distributed among the farmers on 50% subsidy.
Major Achievements during 2018-19

- 74.29 hectares rejuvenated under the mission.
- 70 Weeders distributed among the farmers on 50% subsidy.
- 498 Hot Air Dryers purchased for farmers.
### Physical Target & Achievements

<table>
<thead>
<tr>
<th>S. No</th>
<th>District</th>
<th>Target (In ha)</th>
<th>Ach. ending 03/2018 (In ha)</th>
<th>Ach. During 2018-19 (In ha)</th>
<th>Cumulative Ach. as on date 2018-19 (In ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Pulwama</td>
<td>3200</td>
<td>1847</td>
<td>72</td>
<td>1919</td>
</tr>
<tr>
<td>02</td>
<td>Budgam</td>
<td>300</td>
<td>328</td>
<td>-</td>
<td>328</td>
</tr>
<tr>
<td>03</td>
<td>Srinagar</td>
<td>165</td>
<td>162.71</td>
<td>2.29</td>
<td>165</td>
</tr>
<tr>
<td>04</td>
<td>Kishtwar</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3715</td>
<td>2387.71</td>
<td>74.29</td>
<td>2462</td>
</tr>
</tbody>
</table>
**Irrigation Status**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Particulars</th>
<th>Total Target</th>
<th>Total Achievement as on date</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Production wells</td>
<td>126</td>
<td>111</td>
</tr>
<tr>
<td>02</td>
<td>Production wells in private sector</td>
<td>02</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>128</strong></td>
<td><strong>113 as on date, likely to increase.</strong></td>
</tr>
<tr>
<td>03</td>
<td>Harnessing of Bore-wells by way of installation of electro mechanical equipment</td>
<td>128</td>
<td>108</td>
</tr>
<tr>
<td>04</td>
<td>Providing of Sprinkler system with <em>(Cumulative Command of 98 ha. as against 200 Ha.)</em></td>
<td>128</td>
<td>16 Completed 112 under progress. *</td>
</tr>
</tbody>
</table>

* 98 Bore Wells are to be handed over by MED Deptt at the end of January, 2019 as per the commitment made by Chief Engineer MED in the meeting with Secretary to Agri.Prod.Deptt.*
The Mechanical Engineering Department (MED), asked to expedite the laying of sprinkler irrigation system.

District level Monitoring Committee headed by the District Development Commissioner and District Superintendents of Police constituted for over seeing the progress under sprinkler system.
Saffron Park at Dussu Pampore

- The Spice Park to be commissioned this year i.e. 2018-19 at Dussu, Pampore.

Extension of the project:

The Government of India, has extended the project completion period by another 2 years i.e. 2019-20.
• Village Committees Constituted

• Review meetings.
  Monthly meetings are being convened to review the progress

• Saffron rules
  Saffron Rules have been issued vide SRO-38 Dated:24-01-2018 compline to Saffron Act-2007.
# Kashmir Saffron - Saffron with a difference

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>Kashmir Saffron</th>
<th>Iranian Saffron</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROCIN CONTENT*</td>
<td>8.72%</td>
<td>6.82%</td>
</tr>
<tr>
<td>FILAMENT LENGTH</td>
<td>Long and Thick Head</td>
<td>Short and Thin Length</td>
</tr>
<tr>
<td>COLOUR</td>
<td>Deep Red</td>
<td>Red</td>
</tr>
</tbody>
</table>

*Source: Status of Saffron in J & K by F. A. Nehvi*
Orthodox mind set of saffron growers have been swayed successfully and the saffron growers resorted to adopt scientific methodology for promoting saffron cultivation as prophylactic measures and soil health reclamation measures are being taken as bold initiatives which is game changer in Saffron cultivation and 10.88 T/ha organic manure is being applied to soil for promoting saffron crop production programme. By this way the Saffron growers recorded net increase in productivity from 1.800 Kgs/ha to 5.00 Kgs/ha in rejuvenated Saffron area under National Mission on Saffron.
<table>
<thead>
<tr>
<th>Year</th>
<th>Total Area</th>
<th>Rejuvenated Cumulative Total (area in ha)</th>
<th>Total area under traditional method</th>
<th>Total Production Rejuvenated area (MTs)</th>
<th>Total production inclusive from non-traditional areas (MTs)</th>
<th>Total Productivity (Kgs/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>3715</td>
<td>-</td>
<td>3715</td>
<td>-</td>
<td>10.03</td>
<td>2.69</td>
</tr>
<tr>
<td>2011-12</td>
<td>3715</td>
<td>331</td>
<td>3384</td>
<td>1.489</td>
<td>10.79</td>
<td>2.9</td>
</tr>
<tr>
<td>2012-13</td>
<td>3715</td>
<td>1274</td>
<td>2441</td>
<td>5.733</td>
<td>12.445</td>
<td>3.34</td>
</tr>
<tr>
<td>2013-14</td>
<td>3715</td>
<td>1802</td>
<td>1913</td>
<td>8.649</td>
<td>14.005</td>
<td>3.77</td>
</tr>
<tr>
<td>2014-15</td>
<td>3715</td>
<td>1959</td>
<td>1756</td>
<td>2.938</td>
<td>5.572</td>
<td>1.5 (Floods)</td>
</tr>
<tr>
<td>2015-16</td>
<td>3715</td>
<td>2135.00</td>
<td>1580</td>
<td>11.742</td>
<td>16.166</td>
<td>4.35</td>
</tr>
<tr>
<td>2016-17</td>
<td>3715</td>
<td>2214.81</td>
<td>1497</td>
<td>12.19</td>
<td>16.45</td>
<td>4.42</td>
</tr>
<tr>
<td>2017-18</td>
<td>3715</td>
<td>2387.71</td>
<td>1323.75</td>
<td>3.92</td>
<td>5.2</td>
<td>1.4*</td>
</tr>
<tr>
<td>2018-19</td>
<td>3715</td>
<td>2462</td>
<td>-</td>
<td>-</td>
<td>10.46</td>
<td></td>
</tr>
</tbody>
</table>

* Prolonged Dry spell resulted in decrease in yield
## Funds Position

<table>
<thead>
<tr>
<th>S. No</th>
<th>Scheme</th>
<th>Financial Targets</th>
<th>Funds Released</th>
<th>Expenditure (as on date)</th>
<th>Unspent Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National Mission on Saffron</td>
<td>329.26</td>
<td>235.69</td>
<td>230.101</td>
<td>5.589</td>
</tr>
</tbody>
</table>
Partners in the project funds position thereof

<table>
<thead>
<tr>
<th>S. No</th>
<th>Department</th>
<th>Financial Targets</th>
<th>Funds Released</th>
<th>Expenditure (as on date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Director Agriculture Kashmir</td>
<td>222.583</td>
<td>135.563</td>
<td>129.977</td>
</tr>
<tr>
<td>2.</td>
<td>Director Agriculture Jammu</td>
<td>6.900</td>
<td>5.760</td>
<td>5.757</td>
</tr>
<tr>
<td>3.</td>
<td>SKUAST (K)</td>
<td>3.380</td>
<td>3.380</td>
<td>3.380</td>
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<tr>
<td>4.</td>
<td>CITH</td>
<td>0.787</td>
<td>0.787</td>
<td>0.787</td>
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<tr>
<td>5.</td>
<td>Mechanical Engineering Department</td>
<td>32.000</td>
<td>30.590</td>
<td>30.590</td>
</tr>
<tr>
<td>7.</td>
<td>National Horticulture Board</td>
<td>37.810</td>
<td>37.810</td>
<td>37.810</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>329.26</td>
<td>235.69</td>
<td>230.101</td>
</tr>
</tbody>
</table>
**Details of funds released for Establishment of Spice Park at Dusoo Pampore to National Horticulture Board, New Delhi**

(Rs. in Crore)

<table>
<thead>
<tr>
<th>Name of the Component</th>
<th>Project Cost</th>
<th>Revised Project Cost</th>
<th>Amount released as on date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment of Spice Park at Dusoo Pampore</td>
<td>24.54</td>
<td>37.81</td>
<td>37.81</td>
</tr>
</tbody>
</table>
India International Kashmir Saffron Trade Center (IIKSTC)
Dussu, Pampore Pulwama- J&k
(Saffron Park)
Why Saffron Park

Scientific post-harvest handling practices like Drying, Grading, Stamen Separation etc.

To enforce adoption of quality standards and fix the price based on Quality grades at farm gate level

To end the menace of spurious saffron and adulteration

To carry out regular evaluation and certification of saffron

To provide a common facilitation center for E-trading of Kashmir saffron.
<table>
<thead>
<tr>
<th>Comm/Secretary</th>
<th>APD</th>
<th>Chairman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director Agriculture Kashmir</td>
<td>Member Secretary</td>
<td></td>
</tr>
<tr>
<td>Joint Director</td>
<td>Director  IISKTC (Member)</td>
<td></td>
</tr>
<tr>
<td>D.D.Commissioner Pulwama</td>
<td>Vice Chairman IISKTC Ex-Officio (Member)</td>
<td></td>
</tr>
<tr>
<td>Director Research SKUAST-K</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>Rep. MD,NHB</td>
<td>Member /Special Invitee</td>
<td></td>
</tr>
<tr>
<td>Rep.Chairman APEDA</td>
<td>Member /Special Invitee</td>
<td></td>
</tr>
<tr>
<td>Rep.Secretary Spice Board</td>
<td>Member /Special Invitee</td>
<td></td>
</tr>
<tr>
<td>Rep.MD,IFAB</td>
<td>Member /Special Invitee</td>
<td></td>
</tr>
<tr>
<td>Rep.Dy.Chairman ,Tea Board</td>
<td>Member /Special Invitee</td>
<td></td>
</tr>
<tr>
<td>Rep. Chairman Kash. Eco. Allaince</td>
<td>Member /Special Invitee</td>
<td></td>
</tr>
<tr>
<td>State Co-Ordinator FICCI</td>
<td>Member /Special Invitee</td>
<td></td>
</tr>
<tr>
<td>Sh.Ab.Majeed Wani</td>
<td>Member/Grower</td>
<td></td>
</tr>
<tr>
<td>Sh.Javeed Ahmad Ganai</td>
<td>Member/Grower</td>
<td></td>
</tr>
<tr>
<td>Sh.Riyaz Ahmad Sheikh</td>
<td>Member/Trader</td>
<td></td>
</tr>
<tr>
<td>Adv.Nadeem Qadri</td>
<td>Member/Trader</td>
<td></td>
</tr>
<tr>
<td>Designation</td>
<td>Executive Engineer, Pulwama, J&amp;K</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td>Qualification &amp; Experience</td>
<td>Education: M.Tech. in Engineering</td>
<td></td>
</tr>
<tr>
<td>Desirable skills and experience:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Should have good verbal and written communication skills and negotiation skills.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Experience in vendor negotiation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Proven computer skills in MS Office, Internet, Skype, Autocad etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent time, planning and project management skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 10-15 years of experience as HoD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functions/ Role &amp; Responsibility</td>
<td>Input-Process based Performance parameters</td>
<td></td>
</tr>
<tr>
<td>1. To arrange for issue sanction, Technical sanctions and work orders.</td>
<td>Verify the drawings and BoQs prepared by the section engineers. Suggest energy efficient technology. Conduct meeting with the selected vendors for negotiation.</td>
<td></td>
</tr>
<tr>
<td>1. To arrange for execution of works in order of priority</td>
<td>• Maintain a list of existing works so as to decide upon the priority of the works.</td>
<td></td>
</tr>
<tr>
<td>1. Arrange for approvals</td>
<td>• Timely allocation of the work to the desired section in-charges</td>
<td></td>
</tr>
<tr>
<td>1. Maintain a document for scheduled maintenance activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Liaise with the project coordinator and respective section in-charges and seek necessary approvals</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# GOVERNANCE MODEL - Role & Responsibility

| 1. Set plan targets for the division | **Review & analyze section wise the breakdown hours and plan for minimizing the breakdown hours**  
<table>
<thead>
<tr>
<th></th>
<th><strong>Set targets for the sections to minimize the breakdown hours</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fund Allotment</td>
<td><strong>Review the costing of the maintenance works and seek approval from Section Engineer-I for execution</strong></td>
</tr>
</tbody>
</table>
| 1. Procurement Planning             | **Review the inventory document submitted on scheduled intervals by section incharges**  
  |  | **Identify the key elements for procurement and decide upon the priority of purchase**  
  |  | **Selection of new vendors on the basis of cost and quality** |
| 1. Compliance to energy efficiency & EHS | **Ensure compliance with government regulations and policies with respect to carbon footprint. Ensure the technology being proposed and the works being carried out are as per** |

| Output Performance Parameters       | **Reduced incidence of breakage, wear & tear (apart from age linked)**  
  |  | **Reduction in R & M costs**  
  |  | **On-time completion of allocated job**  
  |  | **Decreased downtime hours** |

<table>
<thead>
<tr>
<th>Designation</th>
<th>Engineer Civil, Pulwama, J&amp;K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualification &amp; Experience</td>
<td>Education: B.Tech. in Civil Engineering</td>
</tr>
</tbody>
</table>

**Desirable skills and experience:**  
- Should have good verbal and written communication skills and negotiation skills.  
- Experience in vendor negotiation  
- Proven computer skills in MS Office, Internet, Skype, Autocad etc.  
- Excellent time, planning and project management skills  
- Well versed with various civil engineering concepts  
- 5-10 Year of experience as site engineer or project engineer
# GOVERNANCE MODEL: Role & Responsibility

<table>
<thead>
<tr>
<th>Functions/ Role &amp; Responsibility</th>
<th>Input-Process based Performance parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maintenance of services</td>
<td>Maintenance and supervision of structure, roads and other civil works in the park. Plan for scheduled visits and audits of the park to note the condition of the park.</td>
</tr>
<tr>
<td>1. To analyze survey reports, maps, and other data to plan projects</td>
<td>• Analyse the survey reports to determine area to be maintained and also determine the quantity of work to be done from the reports collected through surveys</td>
</tr>
<tr>
<td>1. Renewal of statutory compliances annually</td>
<td>• Maintain a document for statutory compliances and timely renew the documents before the expiration and central audits.</td>
</tr>
</tbody>
</table>
| 1. Liaison with authorities and vendors | • Liaison with the vendors, sub contractors and other personnel engaged with the project for timely and smooth completion of the maintenance activities  
• Coordinating with quantity surveyors for estimating the quantity of the work and negotiate the prices with vendors |
| 1. Adherence to EHS norms | • Ensure at all times that the EHS guidelines and norms are being followed during any activity |

### Output Performance Parameters
- Reduced incidence of breakage, wear & tear (apart from age linked)
- Reduction in R & M costs
- On-time completion of allocated job
- Decreased downtime hours
IJKSTC Overview

Collection center
Cold storage unit
Quality Evaluation Lab.
Stigma separation unit
Packaging Unit
Drying Unit
Processing Block
a) Collection center unit

Objectives / Mandate:
Collection of produce from farmers, proper weighing, issuing code numbers/ tagging and maintenance of record.
Ensure proper marking of the crates to ensure there is no mixing of produce and ownership disputes are avoided.
Handing over the farmer’s produce to stigma separation unit.
Sending excess produce to cold storage after proper coding.
Maintaining liaison with in charge cold storage and other in charges to trace the farmers produce.
Machinery installed

- Weighing balance to weigh farmers produce.
- Main conveyor belt for carriage of produce from collection unit to stigma separation and cold storage unit.
Main conveyor belt

Collection area
b) Cold storage unit

- In case there is an excess of fresh saffron flowers it can be stored in cold room within plastic crates, each crate having a capacity of appx. 4 kg of fresh saffron flowers.
- The excess produce can be stored in racks at a height of 6 ft with multiple perforated plastic crates.
- Capacity of the unit : 2 MT max.
- Temperature to be maintained 0 to 5 degree centigrade.
- Relative humidity to be maintained 90-95 %
Cold storage unit
C) STIGMA SEPARATION UNIT

- Receiving fresh flowers from collection unit.
- Checking the produce for proper coding, tagging and weight and maintaining its record.
- Guiding the farmer to be properly and hygienically dressed.
- Allotment of separation tables along with other necessary requirements viz, collection baskets and stigma collection bowls etc.
- Maintaining the optimum speed of the conveyor belts *i.e.* 7-10 rpm.
- Adjusting the speed of the conveyor belts as per the convenience of the farmers.
- Having a keen eye towards the whole processes of stigma separation.
- Weighing the fresh stigma separated and handing it over to the drying unit for further process.
MACHINERY INSTALLED

- Stigma Separation tables with conveyon belts run by electric motor – 72 No’s (18 tables in each of the four halls with a total seating capacity of 432)
- Plastic crates – type A 7000 No’s
- Plastic Crates – type B 1000 No’s
- Hand Pallet truck – 5 No’s
Motorised stigma separation table

Hand pellet truck
D) QUALITY EVALUATION LABORATORY UNIT

- Receiving coded samples from drying unit for quality evaluation/testing.
- Conducting physical and chemical tests of saffron samples received, using IS methods.
- Providing accurate and globally acceptable test results.
- Allotting grades as per ISO standards for each parameter tested.
- Maintaining liaison with e-auction unit by providing test certification so that the farmer can sell his produce as per the grade certified.
PARAMETERS TO BE EVALUATED

- Extraneous matter.
- Foreign matter
- Acid insoluble ash per cent by mass on dry basis, Max.
- Total ash per cent by mass on dry basis, Max. (%)
- Moisture and Volatile matter per cent by mass, Max. (%)
- Solubility in cold water, per cent by mass on dry basis, ax. (%)
- Min. Picrocrocin (Bitterness Strength) E1% in 257nm on dry basis
- Min. Safranal (Flavour Strength) E1% in 330nm on dry basis
- Min. Crocin (Colour Strength) E1% in 440nm on dry basis.
- Artificial colorants/Illegal dyes.
- Nitrogen and protein (%).
- Fiber (%)
- Minerals and elements.
MACHINERY INSTALLED

- Analytical balances
- Moisture weighing balance.
- Ph. Meter
- Polari meter
- Refractometer
- Fiber extractor
- Total Kjeldahl Nitrogen System
- Double Bean VU Visible Spectrophotometer
- Atomic Absorption Spectrophotometer
- High pressure liquid chromatography (HPLC)
- Liquid Chromatography Mass Spectrophotometer (LC-MS)
- Gas Chromatography Mass Spectrophotometer (GC-MS)
- BOD incubators/Autoclave/Laminar air flow
Quality evaluation laboratory unit

Moisture weighing balance

UV Vis Spectrophotometer

HPLC
E) DRYING UNIT

- Receiving fresh stigma from stigma separation unit, recording initial weight of the produce to be dried.
- Allot dryer usage time & Scheduling of various lots.
- Ensure safe drying of stigma as per established protocols and ensure quality.
- Check in and out quality of material.
- Tagging the material.
- Collect sample for lab test.
- Issue receipt for stigma received for drying and get acceptance receipt for concerned farmer for saffron.
04 Vacuum dryers installed with 48 trays each attached with vacuum pressure pump, hot water circulating pump and hot water tank.

A separate control panel is installed to control the whole system.

Each Dyer is having a capacity to dry 9.0kg of fresh stigma in 40 minutes as per the protocol already standardized.
VACUUM DRYERS
F) PACKAGING UNIT

- Receiving dried stigma (coded) from drying unit for desired packing.
- Weighing of the inlet produce to be packed.
- Collecting test/ grade certification from QEL unit.
- Starting up, running and shutting down the packaging line with minimum wastage of product and material.
- Maintenance of log book of batch numbers and product handling to ensure traceability throughout the marketing channel.
- Continuous sampling and testing of packaged bottles for weight accuracy, sealing and labeling.
- Taking measures to minimizing rejections of the product in terms of seals, labels, weighing accuracy, secondary packaging (preparation of master carton) etc.
Two packing line for small packing of 1,2 and 5 grams having following components.

a. Turn table for continuous bottle feeding. (02 No.)

b. Air jet bottle cleaning machine to air rinse bottles. (02 No.)

c. Saffron filling machine- 14 head weighing filler with filler platform for feeding saffron into feed hopper of multi head weigh filler (02 No.).

d. Bottle capping machine followed by labeling (02 No.)

e. 18 No. of weighing balances.
PACKAGING LINE AND AUTOMATIC FILLER
2) ADMINISTRATIVE BLOCK

- One officer’s room.
- One hall for 15 officials.
- One conference hall.
- One reception lobby.
- Lavatory Block with separate toilet for males & females.
- E- trading hall (at the first floor)
- Sample Display Room (at the first floor) equipped with glass display facilities to support the auction active.
- The sample will be displayed in vessels duly numbered & graded.
e-Auction – Seller / Auctioneer Benefits

Seller / Auctioneer

- Configuration of auction and session rules enables easier adherence to rules
- Easier and Earlier Cataloguing process
- Ability to revise the “Base Price” and “Valuation Price” based on the demand / supply and other sentiments till 24 hours before the auction day.
- Ability to control the “Reserve Price” in real time during auction.
- Ability to monitor multiple lots simultaneously via features like single button knockdown.
- Identify the market trend (demand and pricing) of various brands.
- Faster settlement process via electronic movement of contract note and delivery orders.
- GST compliant
Need for e-Auction

- Growers are not aware of Buyer details across India and hence they have a very small market.
- The Growers were not sure that they are receiving the right market price for Saffron.
- It took longer time for the Growers to receive money.
- Longer time to receive Saffron.
- Buyers needed to visit Saffron Growers at Kashmir to ensure that they received the best price and authentic product.
Overview of System Features

Registration

- Register the stakeholders – Growers & Buyers
- Capture Professional profile and Bank profile
- Create User logins

Pre-Auction

- Configure Auction Rules
- Master Data Management
- Creating Sale programs & Auction sessions
- Publish Auction Catalog

Auction

- Buyer access to Bid
- Ability to change few auction parameters
- Live view of Auction
- Knock-down

Post Auction

- Deal Book
- Contract Note
- Payments
- Auto generation of the Delivery Order on payment confirmation by the Settlement bank.
E-Auction Process Flow for Saffron

- **Auction Admin**
  - Master Maintenance
  - Creation of Sale Program
  - Creation of Auction Sessions
  - Maintenance of Auction Rules and Parameters
  - Use of Auction Control Functions
  - Report Generation

- **Saffron Grower**
  - Enter Saffron Details
  - Send Saffron for storage
  - View Catalogue
  - View Market Information
  - Receiving Payment

- **Auctioneer**
  - View Saffron Details
  - Creation of o-catalog
  - Inspection / Testing comments
  - Auctioneers Valuation
  - Matching & knockdown
  - View Deal Information
  - Issue of Contract Notes
  - Receiving Payment
  - Issue of Delivery Orders

- **Buyer**
  - View e-catalog
  - Buyer's Valuation & Comments
  - Participate in the Bidding process
  - View Deal Book
  - Receiving of Contract Notes
  - Making the Payment
  - Receiving of Delivery Order
  - Taking delivery

**Entity**
- Pre-Auction Process Within the system
- Auction Process within the system
- Post Auction Process within the system
- Process Outside the system

**Flow**
e-Auction – Buyer Benefits

Buyer

• Single Registration & Login for PAN India auction
• Easier access (via electronic media) for catalogues
• My Catalogue and Buying tracker
• Auto bids and parallel bidding
• Easier access to Market depth
• Anonymity of buyers during the bidding process thereby ensuring fair price discovery
• Seamless & Flexible payment system - 24*7
• Immediate Delivery order
e-Auction – Seller / Auctioneer Benefits

- Configuration of auction and session rules enables easier adherence to rules
- Easier and Earlier Cataloguing process
- Ability to revise the “Base Price” and “Valuation Price” based on the demand / supply and other sentiments till 24 hours before the auction day.
- Ability to control the “Reserve Price” in real time during auction.
- Ability to monitor multiple lots simultaneously via features like single button knockdown.
- Identify the market trend (demand and pricing) of various brands.
- Faster settlement process via electronic movement of contract note and delivery orders.
- GST compliant
- One canteen.
- One pantry.
- One Prayer Room.
- One toilet block.
- Four bedrooms with attached bathrooms. (First floor)
- One Dinning hall (First floor)
- 01 House keeping room (First floor)
Fourteen officials of the rank of Agriculture Extension Assistant deployed for IIKSTC.

All the officials have been assigned job responsibilities section wise.

Necessary trainings have been imparted to the officials for smooth functioning of IIKSTC.
1. Six months comprehensive training to all fourteen officials on “Analytical procedures for quality control of saffron” at saffron research station Pampore.

2. One month training to all fourteen officials on “Analysis of spices and spice products for various physical, chemical and residual parameters with focus on analysis of saffron as pr ISO-3632-2 (2010) standard and sampling of spices as per ISO-948 (1980) ” at Quality Evaluation Laboratory, Kerela and Kochi, Spices board of India.

3. Four days training on “Laboratory management system as per ISO/IEC-17025; 2017” at Indian Rubber Manufacturers Research Association, Mumbai (Imparted to four officials from Quality evaluation laboratory unit IIKSTC Dussu, Pampore)
Stigma Separation
Excess Produce To Cold Storage
Collection
Weighing
Conveyor Belt
Coding Tagging Weighing
Quality Evaluation
Vacuum Dryers
Grading as per ISO
Stigma Separation
E -Auction

WORKING OF SAFFRON PARK AT A GLANCE
Revised Action Plan under National Mission on Saffron a component of Rashtirya Krishi Vikas Yojna (RKVY) for the year 2018-19-Agriculture Kashmir

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Component</th>
<th>Unit</th>
<th>Action Plan for 2018-19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phys.</td>
</tr>
<tr>
<td>1</td>
<td>Rejuvenation/Replanting</td>
<td>Ha</td>
<td>250</td>
</tr>
<tr>
<td>2</td>
<td>INM/IDM/IPM</td>
<td>Ha</td>
<td>250</td>
</tr>
<tr>
<td>3</td>
<td>Strengthening/creation of irrigation system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Harnessing of Wells with electro mechanical/Sprinkler Sets and other components including Tube Wells and collection Tanks.</td>
<td>Nos</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>ii) Revised Cost of Saffron Park paid out of the allocation of 2016-17</td>
<td>Nos</td>
<td>01</td>
</tr>
<tr>
<td>4</td>
<td>Administrative / Monitoring Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Grand Total:</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Central Share</strong></td>
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<td></td>
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<tr>
<td></td>
<td><strong>State Share</strong></td>
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</tr>
</tbody>
</table>
LAND PREPARATION FOR SAFFRON CULTIVATION
GRADING OF SAFFRON CORMS
PLANTING OF SAFFRON CORMS
Irrigation
Saffron Fields in Full Bloom
PICKING OF SAFFRON FLOWERS
SEPERATION OF STIGMA FROM FLOWERS
Sh. P. K. Swain (Jt. Secy Credits, GoI) inspecting the progress of work at Spice Park, Dusoo, Pulwama
Sh. P. K. Swain (Jt. Secy Credits, GoI inspecting the progress of work at Spice Park, Dusoo, Pulwama
Principal Secretary to Govt., APD, J&K Government inspecting the work being carried out at Spice Park, Dusoo, Pampore
Principal Secretary to Govt., APD, J&K Government interacting with stakeholders regarding the work being carried out at Spice Park, Dusoo, Pampore
Principal Secretary to Govt., APD, J&K Government interacting with stakeholders regarding the work being carried out at Spice Park, Dusoo, Pampore
CONSTRAINTS

1. Delay in flow of the required funds.
   (A meeting has been held with Joint Secretary MIDH at New Delhi on 09.01.2019 at 3:00 PM with regard to release of funds and detailed presentation given thereof regarding the matter).

2. Conversion of Saffron land for non agriculture purposes.

3. A separate irrigation Division needs to be created like any other irrigation Division for its sustainability.
LIABILITIES ON ACCOUNT OF SAFFRON MISSION

i) Due to Rejuvenation @Rs.25000/Kanal = Rs.10.00 Crores.

ii) Unspent Balance under National Mission on Saffron utilized for completion of Saffron park = Rs.13.00 Crores to be recouped from current year’s allocation.

iii) Provision of irrigation (being done by MED) = Rs.23.00 Crores.
Thanks