# INDEX

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of Udaipur Division</td>
<td>01</td>
</tr>
<tr>
<td>AGRI VALUE CHAIN OF UDAIPUR</td>
<td>02</td>
</tr>
<tr>
<td>Agri Inputs</td>
<td>03</td>
</tr>
<tr>
<td>Irrigation</td>
<td>04</td>
</tr>
<tr>
<td>Agriculture</td>
<td>05</td>
</tr>
<tr>
<td>Organic farming</td>
<td>07</td>
</tr>
<tr>
<td>Agro-Forestry</td>
<td>08</td>
</tr>
<tr>
<td>Horticulture</td>
<td>08</td>
</tr>
<tr>
<td>Animal Husbandry</td>
<td>09</td>
</tr>
<tr>
<td>Agri Marketing</td>
<td>12</td>
</tr>
<tr>
<td>Processing facilities</td>
<td>14</td>
</tr>
<tr>
<td>OPPORTUNITIES FOR INVESTMENT</td>
<td>19</td>
</tr>
<tr>
<td>Storage &amp; Post-harvest Infrastructure</td>
<td>19</td>
</tr>
<tr>
<td>Storage Facilities</td>
<td>19</td>
</tr>
<tr>
<td>Agri-Marketing</td>
<td>20</td>
</tr>
<tr>
<td>Cold storage infrastructure</td>
<td>20</td>
</tr>
<tr>
<td>Farm Mechanization &amp; Custom Hiring Centers</td>
<td>21</td>
</tr>
<tr>
<td>Processing &amp; value addition</td>
<td>22</td>
</tr>
<tr>
<td>Wheat Processing</td>
<td>22</td>
</tr>
<tr>
<td>Soybean Processing</td>
<td>24</td>
</tr>
<tr>
<td>Mustard Processing</td>
<td>25</td>
</tr>
<tr>
<td>Coriander Processing and marketing</td>
<td>26</td>
</tr>
<tr>
<td>Garlic processing</td>
<td>27</td>
</tr>
<tr>
<td>Orange processing</td>
<td>27</td>
</tr>
<tr>
<td>Guava</td>
<td>29</td>
</tr>
<tr>
<td>Medicinal Plants</td>
<td>29</td>
</tr>
<tr>
<td>Allied sectors</td>
<td>30</td>
</tr>
<tr>
<td>Dairy production, processing &amp; marketing</td>
<td>30</td>
</tr>
<tr>
<td>Apiculture – Honey processing</td>
<td>32</td>
</tr>
<tr>
<td>Poultry farming</td>
<td>33</td>
</tr>
<tr>
<td>Upcoming sectors</td>
<td>33</td>
</tr>
<tr>
<td>New crop introduction</td>
<td>33</td>
</tr>
<tr>
<td>Agro-Forestry</td>
<td>34</td>
</tr>
<tr>
<td>Agri-tourism</td>
<td>36</td>
</tr>
<tr>
<td>Contract Farming</td>
<td>38</td>
</tr>
<tr>
<td>Procurement centres for organized retail and e-commerce</td>
<td>38</td>
</tr>
<tr>
<td>ENABLING POLICY ENVIRONMENT</td>
<td>39</td>
</tr>
<tr>
<td>Glossary</td>
<td>41</td>
</tr>
</tbody>
</table>
Overview of Udaipur Division

Rajasthan is the largest state in India (area of 342.675 lakh hectares). The State has robust infrastructure, investment friendly environment, and optimal population density. Its strategic location makes it an important hub for trade and commerce. The state has strong agriculture sector which contributed to 26% of the state’s GSDP in 2015-16. Agriculture is a major driver for the state economy and Udaipur division plays an important role in the same.

Udaipur Division comprises six districts — Udaipur, Banswara, Dungarpur, Pratapgarh, Chittorgarh and Rajsamand — and is popularly referred to as the ‘Mewar & Vagad’ region. The area is well connected by road, rail & air transport and is about 435 km from the state capital, Jaipur.

Udaipur division with a population of ~9.82 million is an agri-dominant region with rich soil type, strong irrigation systems and high yielding varieties of crops. The division has an area of 38.427 lakh hectares accounting for 11.21% of the total land area of the state. Of this area, 47.6% is cropped (~18.30 lakh hectares) which is around 3/4th of the average cropped area of the state at ~76%. The State also has 81.80 lakh hectares of forest land accounting for 21.29% of the total land area of the state (29.86% of the total state forest land). It has a rich produce of a variety of kharif, rabi and horticulture crops complemented by a growing animal husbandry sector. The division is well known for maize, soybean, wheat, ginger, custard apple and mango crops.

The division also leads in agri-research and training infrastructure in Rajasthan. MPUAT, the second Agricultural University of the state, came into existence on 1st November, 1999. The territorial coverage of MPUAT spread over seven districts in the southern part of the state covers two agro-climatic regions of the state, which are (i) Sub-humid Southern Plain and Aravalli hills (IV-A) covering Bhilwara, Rajsamand and parts of Chittorgarh & Udaipur and (ii) Humid Southern Plain (IV-B) covering Banswara, Dungarpur, Pratapgarh and parts of Chittorgarh & Udaipur districts. There are 2 agriculture research stations and 6 ‘Krishi Vigyan Kendras’ (KVKs), and one ATC in the region which are continually involved in researching on seed production of dry land crops, increasing milk productivity of livestock through improved breeds and quality feed, developing skills among rural youth and farmers, and creating awareness amongst farmers on latest agro technologies. Apart from these, a full-fledged soil, seed, fertilizer and pesticide testing lab and 6 soil testing labs are operational in the region.

The State Government has identified 10 Agri Export Zones with focus on spices. There is a promising scope of an additional AEZ on medicinal and aromatic crops in Udaipur division. On account of the robust agricultural produce, coupled with the strategic location and eminence of Udaipur from an agricultural perspective, it merits to dive deeper into the agricultural value chain of the division and explore the plethora of opportunities that the region offers.
The agri value chain of Udaipur comprises 3 key sectors: agriculture, horticulture and animal husbandry.

### Agriculture and Horticulture value chain

#### Inputs
- **Agri Inputs**
- **Irrigation**

#### Key Sectors
- **Agriculture**
  - Maize, Soybean, Paddy, Wheat, Mustard, Pulses
- **Horticulture**
  - Mango, Custard Apple, Ginger, Ajwain, Isabgol

#### Produce Management
- Agro Marketing (includes mandis, cold storage & warehousing)
- Agri based Processing Facilities

### Animal Husbandry value chain

#### Inputs
- **Livestock Feed**

#### Key Sectors
- **Animal Husbandry**
  - Dairy farming, Apiculture, Poultry farming

#### Produce Management
- Processing
- Marketing

---

**Average Yield (MT/Ha) in Udaipur Division compared with the State average (2016-17)**

#### AGRICULTURE

<table>
<thead>
<tr>
<th>Crop</th>
<th>Udaipur Division</th>
<th>Rajasthan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>1.54</td>
<td>1.56</td>
</tr>
<tr>
<td>Wheat</td>
<td>2.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Sorghum</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Pigeon Pea</td>
<td>0.74</td>
<td>0.73</td>
</tr>
<tr>
<td>Soybean</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Lentil</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

#### HORTICULTURE

<table>
<thead>
<tr>
<th>Crop</th>
<th>Udaipur Division</th>
<th>Rajasthan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mango</td>
<td>22.5</td>
<td>29.9</td>
</tr>
<tr>
<td>Custard Apple</td>
<td>79.9</td>
<td>78.4</td>
</tr>
<tr>
<td>Ajwain</td>
<td>0.71</td>
<td>0.68</td>
</tr>
<tr>
<td>Ginger</td>
<td>2.42</td>
<td>2.42</td>
</tr>
<tr>
<td>Garlic</td>
<td>6.9</td>
<td>6.7</td>
</tr>
<tr>
<td>Isabgol</td>
<td>0.98</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Source: Department of Agriculture, Government of Rajasthan
This is primarily on account of the fact that Udaipur division has:

- Ample use of high yielding seed varieties of crops
- Rich black alluvial soil
- Twice the annual rainfall as compared to the state average (Udaipur division: 1033 mm; State average: 482.8 mm)
- Advanced farming practices adopted by the farmers
- High fertilizer consumption per hectare at 97.13 kg/hectare (State average: 52.64 kg/hectare)

Additionally, the state government is also supporting farmers with a consistent supply of seeds and assisting them with stocking of fertilizers.

**Irrigation**

38% of the total area of the division (~6.904 lakh hectares) is under irrigation as compared to 29.68% of the area under irrigation in the state as a whole.

The different modes of irrigation and the relative ranking of Udaipur division within the state has been documented below:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Area (in hectares)</th>
<th>Division rank within the state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanks</td>
<td>24,028</td>
<td>1st</td>
</tr>
<tr>
<td>Canals</td>
<td>93,444</td>
<td>5th</td>
</tr>
<tr>
<td>Wells (incl. tubewells)</td>
<td>5,41,394</td>
<td>7th</td>
</tr>
<tr>
<td>Other Sources</td>
<td>31,572</td>
<td>4th</td>
</tr>
<tr>
<td>Total gross</td>
<td>6,90,438</td>
<td>7th</td>
</tr>
<tr>
<td>irrigated area</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Channel</th>
<th>Total number of channels in the division</th>
<th>Division rank within the state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tubewells</td>
<td>36,807</td>
<td>3rd</td>
</tr>
<tr>
<td>Wells</td>
<td>3,03,080</td>
<td>6th</td>
</tr>
<tr>
<td>Diesel Pump sets</td>
<td>82,530</td>
<td>3rd</td>
</tr>
</tbody>
</table>

The area under drip irrigation in Udaipur division is 8,085 hectares and accounts for 1.2% of the total area under irrigation. However, if we compare this with the state having ~88254 hectares under drip irrigation, the Udaipur division accounts for ~9.16% of the area under drip irrigation for the state and the same has been increasing at a CAAGR of 37% over the last 5 years. Additionally, sprinkler irrigation is also gaining attraction and hence these alternative modes provide opportunity for further expansion.

These well-established modes of irrigation supplemented by greater than average rainfall in the state, assist the farmers in getting higher output. However, there is a significant scope to propagate water conservation practices amongst the farmers of the division and attain the goals of “Per Drop More Crop”.

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**Key Sectors**

**Agriculture**

The Udaipur division, with its predominantly reddish medium textured, well drained calcareous shallow soils on hills, deep soil in valleys, and alluvial in plains, high cropping intensity and twice the average rainfall of Rajasthan, boasts several major kharif and rabi crops in the region. Major kharif crops include maize, soybean, pulses, jowar, guar, paddy and cotton, while Rabi crops include wheat, barley, mustard and gram. Food grains and oilseed accounts for over 93% of the total agricultural produce (3263.84 MT) of the division. In terms of production statistics relative to the other divisions of the state (2016-17), Udaipur division is ranked as:

1st in the state: Maize, Pigeon Pea, Minor Millets
2nd in the state: Soybean, Sugarcane
3rd in the state: Paddy, Urad, Lentil
4th in the state: Barley
5th in the state: Wheat, Sorghum, Gram

**Key Crops – Area and Production (2016-17)**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Area ('000 hectares)</th>
<th>Production ('000 MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>579</td>
<td>890</td>
</tr>
<tr>
<td>Minor Millets</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Pigeon Pea</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Soybean</td>
<td>352</td>
<td>413</td>
</tr>
<tr>
<td>Paddy</td>
<td>53</td>
<td>81</td>
</tr>
<tr>
<td>Lentil</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Urad</td>
<td>43</td>
<td>63</td>
</tr>
<tr>
<td>Wheat</td>
<td>464</td>
<td>1304</td>
</tr>
</tbody>
</table>
Key agricultural crops and their contribution to the total state produce (2016-17)

<table>
<thead>
<tr>
<th>Major agricultural crops</th>
<th>Total Area (000 Ha)</th>
<th>Total production (000 MT)</th>
<th>Yield (MT/Ha)</th>
<th>Total state production (000 MT)</th>
<th>Contribution of Udaipur division to the state production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>579</td>
<td>890</td>
<td>1.54</td>
<td>1466.10</td>
<td>60.69%</td>
</tr>
<tr>
<td>Minor Millets</td>
<td>8</td>
<td>5</td>
<td>0.67</td>
<td>10.20</td>
<td>53.02%</td>
</tr>
<tr>
<td>Pigeon Pea</td>
<td>9</td>
<td>9</td>
<td>0.94</td>
<td>19.50</td>
<td>43.79%</td>
</tr>
<tr>
<td>Soybean</td>
<td>352</td>
<td>413</td>
<td>1.17</td>
<td>1131.80</td>
<td>36.50%</td>
</tr>
<tr>
<td>Paddy</td>
<td>53</td>
<td>81</td>
<td>1.51</td>
<td>452.70</td>
<td>17.89%</td>
</tr>
<tr>
<td>Lentil</td>
<td>10</td>
<td>9</td>
<td>0.87</td>
<td>65.90</td>
<td>13.85%</td>
</tr>
<tr>
<td>Urad</td>
<td>43</td>
<td>38</td>
<td>0.87</td>
<td>305.50</td>
<td>12.31%</td>
</tr>
<tr>
<td>Wheat</td>
<td>464</td>
<td>1304</td>
<td>2.81</td>
<td>12333.50</td>
<td>10.57%</td>
</tr>
</tbody>
</table>

Therefore, the region provides an array of opportunities to expand and leverage on the high yielding varieties of kharif and rabi crops, specifically in the areas of agro marketing and processing facilities.

**Organic Farming**

With over 69,750 hectares of registered organic farm area, Rajasthan is one of the largest states in India partaking in organic farming.

In order to encourage organic farming, the state government, in April 2016, selected 11 districts that would focus primarily on organic farming and Udaipur, Banswara, Dungarpur and Pratapgarh districts are amongst them. Towards this, self-help farmer groups have been created in the districts for assisting farmers to realise a higher value (~30-40% higher than regular output) for their produce.

Organic farming for agriculture and horticulture in the Udaipur division is at a nascent stage, currently. A brief overview is provided below from area under organic farming standpoint:

<table>
<thead>
<tr>
<th>Districts</th>
<th>Organic Certified area (ha.)</th>
<th>Area under conversion period (ha.)</th>
<th>Major Crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Udaipur</td>
<td>1614.88</td>
<td>287.40</td>
<td>Soybean, Garlic, Wheat and Gram</td>
</tr>
<tr>
<td>Banswara</td>
<td>16849.11</td>
<td>19430.77</td>
<td></td>
</tr>
<tr>
<td>Dungarpur</td>
<td>0.00</td>
<td>159.90</td>
<td></td>
</tr>
<tr>
<td>Pratapgarh</td>
<td>0.00</td>
<td>284.95</td>
<td></td>
</tr>
<tr>
<td>Chittorgarh</td>
<td>12744.03</td>
<td>43256.74</td>
<td></td>
</tr>
<tr>
<td>Rajsamand</td>
<td>0.00</td>
<td>20.34</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>31208.02</td>
<td>63440.10</td>
<td></td>
</tr>
</tbody>
</table>
Rajasthan has over 69,750 hectares of registered organic farm area. The State Government has selected 11 districts for special focus on organic farming.

**Agro-forestry**
Agro-forestry is the practice of including woody perennials within farming systems and is commonly prevalent in Rajasthan as a traditional land use and livelihood option. It is practiced in the state in several ways such as:

- bio-fertilizer trees to enrich soil and help in land regeneration, enabling food security
- fuel wood and fodder trees
- medicinal plants & trees
- timber & shelter

Policies such as the National Agro-forestry Policy 2014 and the Sub-Mission on Agro-forestry (SMAF), under the National Mission for Sustainable Agriculture, have helped in expanding tree coverage on farmland.

Rajasthan is the largest state in India in terms of geographical area. The recorded forest area accounts for nearly 9.6% of the state’s geographical area and 4.3% of India’s forest area. Udaipur division has a total of 8180 sqkm of forest cover (30% of the state’s forest cover). With this, the division provides a multitude of opportunities in agro-forestry.

The main tree species which offer support to farmers’ livelihood through various resources and valuable resources are Bamboo, Teak, Sheesham, Mahua, Neem, Palash, Tamarind, Jamun, Karanj, Kher, Aritha, Tendu, Babool, Lasoda and Ratanjot and many other medicinal plants.

**Horticulture**
Horticulture is a predominant sector for Udaipur division, and the yield of key horticulture crops in Udaipur division is in line with the average yield of the state. Over the last 4 years, significant increase has been witnessed in the production of mangoes (Production-CAGR: 10%).

Udaipur division has 4 government horticulture nurseries under RAJHANS, that provide quality planting material to the farmers. Besides this, all the KVKs and ARS Banswara also have well maintained nurseries with mother orchards.

In terms of production statistics relative to the other divisions of the state, the division is ranked 1st in the state in the production of Mango, Ginger, Custard Apple, Ajwain, Ashwagandha and Kalonji.

**Key Horticultural crops of State and Udaipur Division's contribution (2016-17)**

<table>
<thead>
<tr>
<th>Major Horticulture Crops</th>
<th>Total Area (000 ha)</th>
<th>Total production (000 MT)</th>
<th>Yield (MT/ha)</th>
<th>Total state production (000 MT)</th>
<th>Contribution of Udaipur division to the state production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mango</td>
<td>2.4</td>
<td>53.4</td>
<td>22.25</td>
<td>154.79</td>
<td>34.48%</td>
</tr>
<tr>
<td>Custard Apple</td>
<td>0.5</td>
<td>4.02</td>
<td>8.04</td>
<td>4.28</td>
<td>93.80%</td>
</tr>
<tr>
<td>Ginger</td>
<td>0.11</td>
<td>0.27</td>
<td>2.45</td>
<td>0.27</td>
<td>100.00%</td>
</tr>
<tr>
<td>Ajwain</td>
<td>12.4</td>
<td>8.8</td>
<td>0.71</td>
<td>10.54</td>
<td>83.50%</td>
</tr>
<tr>
<td>Ashwagandha</td>
<td>0.56</td>
<td>0.31</td>
<td>0.55</td>
<td>0.31</td>
<td>98.72%</td>
</tr>
<tr>
<td>Isabgol</td>
<td>17.6</td>
<td>17.3</td>
<td>0.98</td>
<td>317.86</td>
<td>5.44%</td>
</tr>
</tbody>
</table>

In order to augment the production of higher yielding and diverse varieties of orange in the state, the State Government in association with the Government of Israel has set up a CoE for citrus fruits in Udaipur and CoE for oranges in Jhalawar. These CoEs propagate among the farmers the methods of crop cultivation and have a state-of-the-art washing, grading and cold storage facility.

Ginger & garlic production is gaining momentum and its production has increased by 50% and 33% respectively over the last 4-5 years.

Ajwain is grown widely and, in order to realize the true potential of the high cultivation in the region, effective cold storage facilities can be provided to minimize wastage.

In order to reap significant benefits from these high yielding horticulture crops, it is essential to establish storage and processing facilities in the division.

**Protected Cultivation**
Protected cultivation in Udaipur division is currently at a nascent stage and can be a boon for the farmers of the region. Currently, 60 hectares of land is under protected cultivation and the key crops include capsicum (red, green and yellow), tomato, cucumber and a few varieties of flowers.

In a bid to promote protected cultivation in the area, the State government has rolled out a scheme for
providing 75% subsidy to the farmers to support initial investment (~INR 425 lakh for 59,600 sqm). Investment in this sector will reap multiple benefits to horticultural farmers of the region.

**Animal Husbandry**

Animal husbandry is an integral part of agriculture and allied activities. It involves breeding and raising livestock such as buffaloes, cows, goats, camels, and extends to poultry farming and fisheries as well. These animals not only provide milk and nutrient-rich food products for human consumption but also are an important source of organic manure, thereby facilitating an additional income for the farmers. Animal husbandry and allied activities supplement farmers’ income and provide protective insurance against agriculture income fluctuations caused due to crop failure and natural calamities. The Udaipur division has 14.71% of the State's total livestock and also over 1136 animal husbandry institutes (including polyclinics, first grade veterinary hospitals, etc.) accounting for 17% of the total establishments of the state.

While agriculture is dominant in the division, the 3 key sectors under animal husbandry that have a strong presence are Dairy, Goatry and Poultry.

**Dairy**

The division accounts for 14.14% of the state’s buffalo and 22.47% of the state’s cattle population. In 2016-17, 3.73 mn MT milk (both cow and buffalo milk) was produced. Udaipur’s milk production is about 8.3% of the state’s production with 22.47% of the cattle population. The major cattle population is non-descriptive or indigenous (Malvi and Gir) which produces ‘AC type’ of milk but are low in yield.

A1 and A2 beta-casein are two types of proteins found in different milk variants, which is determined by the type of breed of cow. Globally, A2 milk is being marketed as a healthier choice and Rajasthan’s Gir and Malvi breeds fall under this category. Institutionalized branding and marketing of local cow breeds coupled with enhanced milk productivity will reap big dividends for the farmers of the state.

Given that there is a scope to improve the current productivity levels, it becomes important to improve the breeds of the cattle through techniques like artificial insemination. One of the major constraints in artificial Insemination and breed improvement programs is bovine infertility, which results in enhanced dry period and huge production losses. For this, Department of Animal Husbandry together with Krishi Vigyan Kendra Badgaon has developed a special treatment protocol, “The Udaipur Protocol.” To increase veterinarian skills, more than 1500 doctors and AI workers have been trained in this protocol and large number of animals have been treated successfully in the field by this protocol. Livestock feed is an important constituent of animal husbandry. Given abundant soybean production in the area, there are ample opportunities for the setting up of soymeal processing units.

Other opportunity areas lie in organized milk procurement and processing infrastructure. Existing milk procurement per day by cooperatives in the division is about 4% of the total production. Whilst the milk production is ample, there is a significant scope to elevate organized procurement and processing of milk.

**Key Statistics of the Dairy Sector in Udaipur Division (2016-17)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Udaipur Division Statistics</th>
<th>Division as a % of State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle (Number)</td>
<td>4.83 mn</td>
<td>22.47</td>
</tr>
<tr>
<td>Milk Production</td>
<td>3.73 mn MT.</td>
<td>8.30</td>
</tr>
<tr>
<td>Dairy Cooperative Societies (Number)</td>
<td>1892</td>
<td>13.30</td>
</tr>
</tbody>
</table>

Institutionalized branding and marketing of local cow breeds coupled with enhanced milk productivity will reap big dividends for the farmers of the State.
With increasing demand for value added products and a large student population (more than one lakh students are enrolled each year in Udaipur), there exists an opportunity not only for improving procurement levels but also for dairy processing for catering to the rising demand of the residents of the division itself.

**Apiculture**

Udaipur division has a strong potential for growth in Apiculture. Though planned and systematically beekeeping mechanism is yet to gear up in the division, the tribes of the division collect honey from the forest area. The honey thus collected from the origin is pure, natural and filtered at home without adding any chemical, admixture, colour or artificial sweetener. The division produces approximately 120 MT honey annually.

The honey so collected by the tribal people is then procured and sold by Rajasthan Tribal Area Development Federation Udaipur (RAJAS Sangh). Krishi Upaj Mandi, Udaipur also provides platform to the farmers to sell their honey in mandi as minor forest produce.

Around 900-1000 farmers in the division have already started beekeeping in a scientific manner. Additionally, the government has undertaken efforts to promote apiculture in the region, by imparting training, education and conducting demonstration programmes for the farmers.

Bee pollination is specifically helpful in mustard farming, as it not only assists in increasing the yield but also helps in improving the quality of the produce. Hence, mustard farmers need to be encouraged to venture in bee keeping and benefits of the same should be highlighted to them enabling an incremental income. Hence, it would be worth merit to create an association to bring together farmers and thereby improve unit economics and overall profitability in beekeeping.

**Produce Management**

**Agri Marketing**

The Udaipur division has 14 mandis (Rajasthan: 147 mandis) that deal in ~4% of the agricultural produce traded in the whole state.

The division has 14 mandis that provide comprehensive infrastructure for trading, agro financing and elementary sorting and grading of produce. Additionally, in order to create a unified market through online trading platform, one Electronic – National Agriculture Market (eNAM) at Fatehnager (Udaipur) has been institutionalized.

<table>
<thead>
<tr>
<th>Key Crops traded in Udaipur division Mandi (2016-17)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Crops</strong></td>
</tr>
<tr>
<td>Wheat</td>
</tr>
<tr>
<td>Maize</td>
</tr>
<tr>
<td>Soybean</td>
</tr>
<tr>
<td>Mustard</td>
</tr>
<tr>
<td>Linseed</td>
</tr>
<tr>
<td>Isabgoal</td>
</tr>
<tr>
<td>Ajwain</td>
</tr>
</tbody>
</table>

Rajasthan State Warehousing Corporation is operating 91 warehouses in 31 districts with a total capacity of 10.9 lakh MT and utilisation levels of around 85%.

Udaipur division has a number of warehouses that store a variety of crops such as maize, wheat, soybean, pulses and mustard. 6 warehousing centers are operating in Udaipur Division with a total capacity of 1.03 lakh MT.

In addition to this, 2 warehouses are also operated in the division by Central Warehousing Corporation (CWC) in Udaipur and Banswara with a capacity of 8500 and 3500 MT respectively.

Udaipur has an additional advantage of having rake point where handling operation is done by FCI, which acts as a nodal agency for procurement of buffer stock.
Processing Facilities

Udaipur division is dominated by rich, high yielding varieties of agricultural and horticultural crops and has a well-established animal husbandry sector.

Good processing facilities are critical for realising the true potential of the produce yielded in the region. Around 135 SME units have already been established in the region in grain milling and manufacturing of food products. However, produce such as soybean, maize, pulses and spices especially ajwain, ginger, turmeric and isabgol need specific focus with regards to advanced grading, packaging and sorting of the output. In addition to this, there is tremendous scope in grading and processing units of minor forest produce like Punwad (Cassia tora), Gum, Honey and Aloe vera also.

For dairy milk processing, Rajasthan Cooperative Dairy Federation (RCDF) currently operates 3 units with a capacity of 60,000 lit., 30,000 lit. and 60,000 lit. per day in Udaipur, Banswara and Chittorgarh respectively. Apart from RCDF, there are other private players as well. However, emphasis needs to be given on manufacturing of value added dairy products.

Summary

Based on an assessment of the current scenario of the agriculture sector in Udaipur, the key opportunities that emerge for the major crops and in animal husbandry sector are summarized as below:

<table>
<thead>
<tr>
<th>Major crops</th>
<th>Strengths</th>
<th>Areas of improvement</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Paddy       | • Division accounts for 18% of the state's paddy production  
              • Export quality (exported to Middle East) rice is produced  
              • Need for further value added product manufacturing/processing facilities | • Need for further value added product manufacturing/processing facilities | √√ (only primary facilities available, need for advanced facilities) |
| Soybean     | • 37% of State's production is in the division  
              • Focus on warehousing facilities  
              • Need for advanced processing facilities | • Focus on warehousing facilities  
              • Need for advanced processing facilities | √√ (only primary facilities available, need for advanced facilities) |
Government of Rajasthan is actively promoting in improving the key elements in the agri value chain of Udaipur whilst simultaneously promoting the uptake of modern technologies and imparting training to the farmers.
Opportunities for Investment

Udaipur provides ample opportunities for investment across the agri value chain.

1. Storage & Post-harvest Infrastructure:
   a. Storage Facilities

   Udaipur division plays a key role in the overall agriculture & horticulture crop production of the state. Production of some key crops such as maize, wheat, paddy, soybean, etc. has increased considerably during the recent years. This opens up numerous opportunities for investment in storage facilities. As mentioned earlier, Udaipur has several government owned warehouses. However, there is a scope for furthering the storage infrastructure to keep pace with the growing production.

   - **Investment Potential**
     - Grain storage silos: Storage in silos provides multiple advantages such as cost-effectiveness and convenience. It saves the depositors the costs of loading, unloading and bagging the produce at the mandi level.
     - Investments should be considered in setting up silos in areas closer to the actual production so as to prevent post-harvest losses.
     - These investments in specialized silos could be considered for key crops like maize, soybean, paddy and mustard.

   - **Warehousing infrastructure and value-added services:** Growing production in the division also opens up opportunities in further development of agri-warehousing infrastructure. Private players can invest in providing integrated post harvest management solutions such as:
     - Establishment of modern, temperature and moisture controlled warehouses.
     - In addition to warehousing facilities, other value-added services can also be provided, including
collateral management, agri-insurance, quality testing and bulk procurement.
- Warehouse receipt financing is another potential area that can be explored.

b. Agri-Marketing:
Udaipur is home to a few commodity specific mandis, minor forest produce mandi in Udaipur and mandi for Ajwain in Kapasan (Chittorgarh). Besides, there are a number of other mandis, where large volumes are traded everyday. There is a scope for improvement in the infrastructure and operations of these mandis.

- Digitisation:
  - Further Promotion of e-NAM: Udaipur division currently has 1 mandi at Fatehnagar (Udaipur) that is connected to the e-NAM system
  - However, the adoption of the platform among the farmers is still low (~1-2%)
  - Further emphasis should be placed on promotion of the channel
  - Government could invest in more manpower and technological solutions to educate and register farmers on to the platform at the mandi locations
  - Further investments would be needed in basic infrastructure such as warehouses, storages and inventory management systems to assist the farmers in storing produce before and after trading hours
  - Electronic weighing: All the mandis in Udaipur division have already adopted it for the weighment of the farmers produce.

- Specialised/Private Mandis:
  - Private mandi yards can help farmers in a number of ways including:
    - Providing an alternative channel for the farmers’ produce
    - Provision of an organized market in uncovered areas
    - Ensuring competition among the mandis and can lead to better realization for farmers with better quality produce
    - Further, propagation of such mandis could be very beneficial for the farmers and, private players could also be incentivised by the government to undertake such initiatives.
  - Mandi for Medicinal Plants: These plants currently do not have a specialized marketing platform in the division. Such platform could be established to promote further production & marketing.

c. Cold Storage Infrastructure
Investments have been made in the cold-chain infrastructure during recent years. Facilities for key horticulture crops such as Mango, Custard Apple, etc. have been established. However, there is still a gap between the demand and supply for cold storage.
- Garlic: Garlic is predominantly a Rabi crop. However, it is required for consumption round the year. Longer term storage of the produce also requires specialized conditions.
- There is an immense scope for investment in specialized cold storage structures for garlic in the Udaipur division, since such storage facilities are not sufficient and not specialized enough for the production in the region
- Currently Custard Apple lacks an organized procurement channel, and most farmers sell the produce locally which does not fetch them good realizations. An organized procurement channel will be highly beneficial.

The state government has signed 3 MOUs to set up around 2,600 Custom Hiring Centers (CHCs) in the state.

- Cold storage facilities are slowly picking up for Custard Apple in the division. However, given the significant production of the crop, there exists an ample opportunity for further investment
- Medicinal Plants: Medicinal plants require careful and specialized post-harvest storage and transportation. The produce needs to be protected from any kind of contamination and has to be protected from heat and rain during transportation. Hence, investments could be made towards proper storage and transportation of the produce.

d. Farm Mechanisation & Custom Hiring Centers
Rajasthan is a major proponent of farm mechanization in India, accounting for 9% of the total tractor sales in the country. The state has seen a significant shift towards farm mechanization, synonymous with the robust growth in agricultural production, with the installation of sprinklers, water pumps and usage of tractors, tillers, etc.

The advantages of farm mechanization lie in increasing efficiency, saving labor time and driving sustainability across the agri-value chain. The Government of Rajasthan is committed to increasing the level of mechanization in the state, thereby increasing the productivity of crops.

The government is jointly working with the private players to develop Custom Hiring Centers (CHCs) in the state. The state government has already signed 3 MOUs with the leading farm mechanization players TAFE, Mahindra and Mahindra and John Deere totaling worth ~INR 1,600 cr to set up around 2,600 CHCs in the state.

Future Potential
The Udaipur Division leads in Rajasthan in the production of agricultural crops such as Paddy, Soybean and Wheat.

- Mustard: The production of these crops naturally leads to the usage of tractor drawn harvesting, threshing machines and combines to efficiently sow, reap and gather produce.
- Currently, a large base of farmers and other stakeholders of the Udaipur division hire tractors, combine threshers and other large farm equipment from other districts such as Sri Ganganagar and Kota. and even from other neighboring states (Punjab, Haryana and Madhya Pradesh) during sowing and harvesting seasons. Given that the local production levels of crops of wheat, mustard and paddy are growing significantly, it
creates a strong case for elevating the farm mechanization levels in the region. However, given small land holdings, it is difficult for the farmers to own and employ large scale farm mechanization. Small and marginal farmers are usually unable to own farm machinery on their own or through institutional credit. The Department of Agriculture provides a back ended subsidy of up to 40% for the establishment of CHCs.

In this regard, there are opportunities for establishing CHCs for farm machinery & implements in the division, considering the unique position it holds in the state’s agricultural scenario. Some of the equipment and implements that may be lent/provided through CHCs are:

- Seed-cum-fertilizer drill, zero till drill, land levelers
- Seed dressers, sprayers, weeding implements and other drudgery reduction implements
- Tractor and various tractor - driven farm implements
- Combined harvesters and threshers

2. Processing & Value Addition

As mentioned above, Udaipur division has encouraging production for a number of important crops. However, the level of processing and value-addition being done in the division is still low. This opens up possibilities for investment in establishing processing units for these crops.

Agriculture Crops

a. Wheat Processing

Wheat not only forms the backbone of Indian agriculture, it is also an essential crop for Rajasthan and the Udaipur division. Udaipur division contributes 11% of the state’s wheat production (FY ’16) and provides significant opportunity in the wheat processing.

Value Chain of Wheat
Investment Potential
Despite the large production in the division, the level of processing of wheat is limited across all 4 districts. Opportunities that exist in the division include:

- **Wheat Flour Milling and Packaging:**
  - Majority of the wheat flour milled in Udaipur, Banswara, Chittorgarh, Rajsamand and Pratapgarh districts is for the local consumption by smaller local players. Opportunities exist in establishing more such milling plants. Currently, there are multiple commercial wheat flour milling units in the Udaipur district, including few private mills. There is a scope for addition of more such milling plants for the manufacture of packaged and branded wheat, specifically, to cater to the student canteens and restaurants which have a significant presence in Udaipur.

- **Value-added Products:**
  - Production units for value added products such as biscuits, bread rolls and bakery products
  - Units for other ready-to-cook products like kitchen staples such as cereals, noodles, pasta, seewai, etc.

Other Usages:
- Biodegradable plastics from wheat starch: Demand for biodegradable plastics is on the rise, especially among the end users who prefer ‘eco-friendly’ solutions
- Wheat-based raw materials for cosmetics: Such raw materials have a number of applications in the cosmetics industry, such as:
  - Wheat germ oil is used as a skin conditioning agent
  - Wheat gluten is used in cosmetics, hair conditioners and skin conditioners (for its binding effect)
  - Wheat germ glycerides are used in manufacture of lipsticks and moisturizers

b. Maize Processing
Maize is also an essential and important cereal crop of Southern Rajasthan and the Udaipur division. Udaipur division contributes 61% to the state’s Maize production (FY ’16) and provides significant opportunity in the processing sector.

Value Chain of Maize
Investment Potential

Despite the large production seen in the division, the level of processing of maize is limited across all 6 districts. Opportunities having potential in the division include:

- **Maize Flour Milling and Packaging:**
  - Majority of the maize flour milled in Udaipur, Banswara, Dungarpur, Chittorgarh, Rajsamand and Pratapgarh districts is for local consumption by smaller local players. However, there is a good scope for addition of more such milling plants for the manufacture of packaged and branded maize, specifically, to cater the growing demand of the hotels and restaurants in the division.

- **Value-added Products:**
  - Production units for value-added products such as biscuits, and bakery products.
  - Units for other ready-to-cook products like kitchen staples such as corn flakes, pop corn, etc.

**c. Soybean Processing**

Rajasthan is one of the leading producers of soybean in India. However, few soybean processing plants are present in the region and most of these are only for oil extraction.

Investment Potential

Opportunities for investment exist in the next level of value-addition to manufacture a number of different products:

- **Soymeal & Animal Feed:** Opportunities exist in the division for investments in soymeal processing facilities. Soymeal and animal feed are useful from the export perspective as well.
- **Soy-based Foods:** Global consumption of soy-based foods, especially tofu and soy milk, is growing. The market for soy milk itself is expected to show double-digit growth to reach USD 1.7 billion in the Asia-Pacific region by 2020. Promising opportunities exist for manufacturing of soy-based foods in the division.
- **Soy Paste & Sauce:** Soy paste and sauces are popular not only in the eastern countries but also widely used in the west, especially in the United States.
- **Industrial Products:** Soybean is also used in the manufacturing of a number of industrial products such as resins, plastics, varnishes and paints. It can also be used for products such as soaps, disinfectants, insecticides, printing inks, etc.

**d. Mustard Processing**

Rajasthan is the largest producer of mustard in the country and, a significant proportion of this production is attributed by the Udaipur division.

There are 8 soy processing plants in the division which are utilized for mustard oil processing after the Rabi season (when the capacity is not being used for soybean). The division has strong production of the crop and good infrastructure available (for sorting, grading and storage of the crop), but the level of mustard processing in the division is still quite limited.

**e. Ginger Processing and Marketing**

With around 100% of the state’s production, Udaipur division has monopoly in ginger production. It is not only known for the vast quantity of crop produced but is also noted for the quality of the produce. However, there is scope for improvement for both processing and improving the seed varieties to include more aroma, fiber and pungency content in the produce.

Investment Potential

At present, non-significant processing (grading/grinding) units for ginger have been established in the division. There is scope for investment in the post-harvest management of the ginger production, given the
large-scale and high-quality production in the region:
  - Rhizome: Rhizome of the plant is the economic part and can be used as a condiment and spice.
  - Saunth Preparation: Dried rhizomes after pulverization have numerous benefits and is used in a number of industries globally.
  - Processing for pharmaceutical industry: Further, opportunities also exist in manufacturing industries for making products that use ginger as an ingredient such as pharmaceutical industries.

f. Garlic Processing
Garlic is produced in abundance in Chittorgarh and Pratapgarh districts of the division and the area is showing increasing trend. There has been an increase in production by ~60% and production amounted to 91,136 MT in 2016-17, which accounts for 13% of the garlic produced in the state.

Investment Potential
  - Dehydrated Garlic, Garlic Flakes and Garlic Powder:
    - Dehydration and conversion to garlic flakes helps in reducing the bulb losses during storage and in turn, can reduce the transportation cost as well.
    - Conversion of garlic into a powder form is important from the export perspective, especially to Europe and USA.
    - Various products of garlic such as garlic oil, dehydrated garlic powder, garlic juice & extract and pickled garlic can also be prepared.
  - Food Processing: Garlic provides number of opportunities as an ingredient in the food industry:
    - It is used not only as a condiment, but is also in the preparation of tomato ketchup, salad dressings, gravies, pickles and curries.
    - Garlic paste is widely used in restaurants, fast-food outlets, hotels and other commercial kitchens.
    - Garlic essential oil, extracted by steam distillation of freshly ground cloves, is used in making beverages, ice-creams, confectionery & bakery goods, chewing gum and condiments.
    - Medicinal Usage: Garlic has immense potential for medicinal usage, especially in helping clear coughs, psoriasis, yeast infections, as a skin cleanser, etc.

g. Custard Apple Processing
Custard apple is a source of income of the tribal farmers of southern Rajasthan. In Rajasthan, it is grown in about 20,000 ha area with the average productivity of approximately 1.3 tons per hectare. It was observed that more than 50 percent of fruits produced in tribal areas go waste after harvesting due to inefficient storage techniques and short shelf life of fruits. During the glut period, tribal farmers have to sell their produce at throw away prices of less than Rs5/ per kg. Therefore, it is pertinent to develop appropriate technology for post harvest, processing and value addition of Custard apple.

Udaipur division is the main region for the production of custard apple in the state. In 2016-17, the division contributed to over 94% of the state’s production. Establishment of a CoE focusing on custard apple in Chittorgarh district of the region has already been started.
94% of the Custard Apple production of the State is from the Udaipur division.

**Investment Potential**

Given the large production level, there are a number of opportunities in processing of Custard Apple that could be explored:

- **Fruit Ripening units**: As Custard apple ripens after harvest, therefore, for proper ripening, there is need of ethylene based ripening unit in the district as well as in other parts of Udaipur division.

- **Processing Unit**: There is a huge demand of Custard Apple pulp in Ice Cream industry. Private players can establish processing plants in the division for custard apple based on contract farming model, thus helping in providing marketing security to the farmers.

- **Oil Extraction Unit**: Custard apple seed oil has insecticidal properties and it has a lot of scope in organic farming. Therefore, oil extraction units may also be established in custard apple growing areas of the division.

For Example:

- Kray Vikray Samiti, Kumbhalgarh in Rajsamand district is going to start custard apple pulp extraction unit from this season itself.

- Gumar Mahila Samiti, a producer company of tribal women supported by SRIJAN (Self Reliant Initiatives through Joint Action) commercially extracted 5000 kg. of pulp from 20 tons of fruits at Nana village, Bali, (District Pali) and Devla village in Kotra block of Udaipur.

- Several value added products like ice cream, shake and basundi, etc can be prepared from custard apple. Thus, there is a huge demand from ice cream industries, dairy and food processing Industries, bakery and confectionery industry, etc.

**h. Mango**

Banswara district of the state has huge potential for mango cultivation. Mango is amongst the key fruits grown in the division. 35% of the mango production of the state in 2016-17 came from the Udaipur division. A number of varieties along with Desi cultivars are being grown in the districts of Udaipur division.

**Future Potential**

Processing opportunities that exist for this fruit include:

- **Packing and Hot Water Treatment Units**: Grading, hot water treatment to get rid of fruit fly from export point of view and packing units for the mango produce could be established in the division.

- **Fruit Ripening Units**: As Mango ripens after harvest, therefore, for proper ripening there is a need of ethylene based ripening unit in the district as well as in other parts of Udaipur division.

- **Integrated Processing Plant**: Similar to other fruits, Mango has widespread usage in industry, especially in juice and pickle industry. Hence, integrated processing plants utilizing contract farming of Mango could also be envisioned.

Output from such units could then be used in the manufacture of various value-added products as mentioned below:

- **Mango Pulp Canning Unit** for getting remunerative price of the produce.

- **Value-Added product manufacturing**:
  - Mango pulp has widespread usage in the preparation of fruit juices, nectars and other beverages
  - Mango can be processed to make other products such as pickle and mango leather (Aam Papad), etc.

**I. Medicinal Plants**

Ashwagandha and Isabgol are two important and emerging medicinal plants grown in the Udaipur division. In 2016-17, ~23,686 MT of medicinal plants’ produce was in Udaipur.
Given the favourable growing conditions for these crops and high realization potential for farmers, there is a room for greater promotion of the crops through investments in processing:

- **Ashwagandha**
  - It is considered as one of greatest rejuvenating agents in ayurvedic medicine. The leaves are applied externally as a paste or after crushing on inflamed areas and swellings. The leaf extract is also utilised in the preparation of herbal tea, powders, tablets and syrups.
  - In Pharmacology, Ashwagandha can be used in anti-biotics, anti-oxidants, anti-inflammatories, etc.
  - Processing units for ayurvedic and unani medicine manufacturing, based on contract farming arrangements with local farmers could be considered.

- **Isabgol**:
  - Investments in establishing units for making psyllium husk powder could be considered. This is important from an export perspective as well.
  - The plant also has widespread application in medicine manufacturing. It is used in reducing cholesterol, improving bowel movements and palatability, treating constipation, etc.
  - It is also used in manufacturing of dietary supplements.

3. Allied sectors
In addition to investments in post-harvest management of crops grown in the division, promising opportunities for investment are also present in the allied sectors:

**Animal Husbandry**

- **Dairy Production, Processing & Marketing**
  The dairy sector has been growing at a rapid pace in the division and has a robust demand considering the large rural and urban population.

**Investment Potential**
Potential investment opportunities in the dairy processing operations are:

- Processing and branding:
  - Production of value-added dairy products such as cheese, butter, yoghurt, powder, sauces, etc.
  - Production and branding of packaged milk to cater to local resident's demand and the growing student population.
  - Manufacturing of other related products such as ghee, condensed milk, etc.
  - Production of buffalo skimmed colostrums powder and whey powder can also have promises.
  - Investment can be made in improving the cold chain for dairy through setting up of more collection points and bulk milk coolers.
  - Dairy farmers could also be organized as ‘Producer companies’ or FPOs which would help in increasing the income of the farmers.
  - Branding & marketing of milk procured via these FPOs can also be undertaken.

Additionally, investment opportunity exists for the establishment of dairy equipment manufacturing units. Processing equipment such as milk testing equipment, electronic milk analyzers, cream separators, milk cans and milking machines would support and promote the establishment of the facilities for producing value
added dairy products.

b. Farmer Extension Activities (Production):
- Cross-Breeding of Species: Methods such as cross-breeding to increase milk yield of local low-yielding cattle breed could be adopted.
- Fertility Camps/Clincs: Support could be provided via fertility clinics/camps at the 78 goshalas in the Udaipur division.
- Farmer Education: Farmers currently lack awareness on practices such as artificial insemination that are needed for breed improvements.
- Investments could be made in setting up training centers for dairy farmers and farm-hands.

b. Apiculture – Honey Processing

Tribes of the division are collecting honey from the forest area. The honey thus collected from the origin is pure, natural and filtered at home without any chemical, admixture, colour or artificial sweetener. The division produces approximately 120 MT honey annually.

With the support of ample availability of flora from forest as well cultivated crops like mustard, a good amount of honey so collected by the tribal people is then procured and sold by Rajasthan Tribal Area Development Federation Udaipur (RAJAS Sangh). Krishi Upaj Mandi, Udaipur is also providing platform to the farmers to sell their honey in mandi as a minor forest produce.

Around 900-1000 farmers in the division have already started beekeeping in a scientific manner. Bee-keeping in the region is seeing an upward trend. Opportunities exist in the following areas:

Investment Potential
- Processing: Currently, processing capabilities for apiculture products is missing in the division.
  - Processing of Raw Honey: Majority of the farmers in the division currently sell honey in raw form to out-of-state processors. Investments could be made in setting-up processing facilities for the raw honey produced in the area.
  - Locally produced and processed honey could also be packaged and branded in the area and marketed thereafter.
- Value-Added Products:
  - Industrial usages: Bee wax is utilized in the pharmaceutical and dental industries. It is also used for cosmetics, ointments, candles and household waxes.
  - There is tremendous scope of establishing processing units in the division especially for organic honey
c. Poultry farming

Poultry farming is important for increasing farmers’ income and ushering in rapid economic growth. There has been an increase of 60% in the poultry population of the state over the previous census. ‘Pratap Dhan’ a new breed of poultry developed in Rajasthan produces 4 times the eggs than the indigenous breeds. In the Udaipur division, poultry farming is still in its nascent stage. As per the 19th livestock census (2012), it had a poultry population of ~11.92 lakh. In 2016-17, Udaipur division reported a production of ~1114.38 lakh eggs which has grown at a CAGR of ~3% over the last 4 years.

Investment Potential

New investments can be made for expanding poultry farming practices in the division through contract farming and, also using the indigenous breeds. Poultry provides attractive returns to farmers with low investment requirements. Increasing youth population and changing consumption pattern is expected to result in significant increase in poultry demand in the division.

4. Upcoming Sectors

The division has a fertile soil and favorable precipitation pattern. These factors along with the good availability of irrigation facilities, open up possibilities for investments in new crop introduction, agro-forestry as well as agri-tourism. In addition, given strong production of various crops, procurement operations based on contract farming agreements with the local farmers should also be explored:

a. New Crop Introduction:

Quinoa:

Experiments at Agriculture University in Udaipur have shown that local conditions favour the growth of quinoa in the region. Between 5 and 18 quintals of crop can be produced per hectare and, it does not require any special technique for its cultivation. Farmers can also expect a 20-25% greater realization for the quinoa crop compared with traditional crops. Quinoa contains a number of important nutrients including proteins, vitamins and fibre. As a result, quinoa has gained popularity globally as a suitable substitute for traditional cereals like wheat and rice.

Investment Potential

Cultivation of the crop provides a number investment opportunities including:
- Milling and packaging of quinoa for domestic consumption as well as exports.
- Manufacture of quinoa-based foods that are emerging as substitutes for animal-based protein in the Asia-Pacific region.

Fruits:

Climatic and soil conditions in the division are conducive for growth of innovative fruit crops such as pomegranate, strawberry and dragon fruit. These high value crops can help in increasing farmers’ income significantly.

- Pomegranate:
  - It requires substantial technical know-how and has a peculiar irrigation time-table and, thus, a concerted push would be required from the CoE as well as from government & industry to promote its
Establishment of grading-sorting and packing units for pomegranate would allow tapping the export market of the crop. India is one of the largest exporters of the fruit and has now begun exporting to large markets like the US.

- Manufacturing of following value-added products can be explored:
  - Juice and other beverages
  - Grenadine (pomegranate syrup) which is used in flavoring alcoholic beverages, soft drinks and confections
  - Dragon Fruit:
    - Conditions favour growth of the fruit and hence its introduction provides an opportunity to tap its growing popularity.
    - Manufacturing units for a wide range of value-added products including jams, jellies, juice, etc. could be considered

b. Agro-Forestry:
Agro-forestry is widely seen as an effective program for efficient nutrient cycling, enhancing organic matter in the soil for sustainable agriculture and for improving tree cover. Given the scale of agricultural operations in Udaipur division, there is plenty of scope for supplementing agricultural crops with agro-forestry.

Investment Potential
Opportunities in agro-forestry trees/crops, primarily pertaining to strengthening of marketing and processing facilities exist in the division. The key crops along with their future potential have been defined below:

- **Henna (Mehndi):** The state ranks 1st in production of body grade Henna.
  - There are opportunities in the packaging and processing of henna in the skin care and hair care industries.
- **Bamboo:** There are opportunities in the following industries:
  - Food & Beverages: bamboo vinegar, bamboo wine, bamboo beer
  - Pulp & Paper industry: bond paper, cardboard, cement sacks

Given the scale of agricultural operations in Udaipur division, there is plenty of scope for supplementing agricultural crops with agro-forestry cover.
- Bio-Energy: biofuel, industrial wood, biomass gasification

- **Teak**: Given its durability, easy maintenance and resistance to insects and termites, Teak wood is widely used in manufacturing furniture.

- **Sheesham (Indian Rosewood/Dalbergia sissoo)**: The wood is an important commercial timber and it has several medicinal benefits: aids in treating ulcers, fevers, sciatica, etc.

- **Khejri (Prosopis cineraria)**:
  - The Khejri tree plays a vital role in agroforestry because of its ability to survive in tough conditions and the different ways in which it can be used by the farmers.
  - Apart from being a source of firewood and fodder, the Khejri also helps in sustaining the nutrient value of the soil and ensuring a good yield.

**c. Agri-tourism:**
The novel concept of developing farms into vacation ventures is one of the fastest growing concepts in the emerging tourism segment. Many tourists want to experience the everyday life of a farmer or a villager and agri-tourism provides a platform to such tourists. The practice bears a number of benefits for farmers including increased income and infrastructure development in the region to accommodate tourists.

The Udaipur division provides a variety of opportunities for the promotion of agri-tourism:

**a. Forest Woodland Walks:**
- The farms irrigated via canal and the adjacent forest area could provide host to tourists coming to view the canal network. This would be especially attractive during winter season. Activities could also be organized at these farms for tourists to get hands-on experience in the farm practice.

**b. Guided tours of Lakes, Dams and Canals:**
- Udaipur in known as city of lakes. In the division, major and medium capacity reservoirs such as Jaisamand, Mahi, Jakham, Som, Kamla, Amba are well known, which provides a number of opportunities for agri-tourism.

**c. Natural Bird Park:**
- Owing to the presence of numerous lakes and water bodies in the division, many species of the migratory birds visit them. This provides excellent recreation for the tourist.

**d. Heritage Sites:**
- Each district of division has many heritage sites of historical, cultural and sculpture, sacrifice and spiritual importance which are really worth visiting sites.

In order to fully tap the potential for agri-tourism in the division, investments will be required in the infrastructural development to address concerns that urban travelers might have for staying in a rural setting such as sanitation, hygiene, safety, etc. worth considering.
d. Contract Farming
Contract farming encourages private investment and assists farmers in increasing their income through direct marketing of agricultural produce. This not only improves productivity but also improves farmers’ access to markets. Immense potential lies in creating a successful partnership between the farmers and the private players. Key crops where contract farming can be effectively leveraged are:

- **Mango and Custard Apple:** Integrated processing plants using contract farming output of mangoes and custard apple could prove to be beneficial for both the farmers and the contracting party.
- **Medicinal plants:** Processing units for Ayurvedic and Unani medicine manufacturing, based on contract farming arrangements with local farmers could be considered.
- **Poultry:** Most poultry firms follow a low-risk integration approach of contract farming for poultry farming.

Apart from the above, maize, ajwain, ginger and other horticulture crops can be considered for contract farming.

Additionally, contract farming is gaining importance from an organic farming perspective also. Farmers can be made aware of suitable organic farming practices by the contracting party, thereby spreading awareness. Produce from organic farming fetches higher returns to the farmers and the certification process becomes the responsibility of the contracting organization, thereby reducing the burden on the farmers whilst promoting the cultivation of produce.

e. Procurement centres for organized retail and e-commerce
Agricultural profile of the division substantiated by the high production levels, robust marketing infrastructure and strong connectivity to national and state capitals, provides immense opportunities for organized retailers and e-commerce players to establish procurement centers, pack houses and processing facilities in the region. Setting up these facilities closer to the area of produce, results in substantial supply chain efficiencies.
Rajasthan Government has taken a number of steps and measures to create an investor and business-friendly environment. These measures provide exceptions, incentives and subsidies to businesses for a number of operational activities. Some of the initiatives include:

**a. Rajasthan Agro-Processing and Agri-Marketing Promotion Policy, 2015**
- Endeavors to make Rajasthan the destination of choice for both domestic and global investors.
- Encourages value addition in agricultural produce and reduction of post-harvest losses, thereby increasing the income of the farmers.
- Aims at increasing the export of value-added products from the state.
- Incentives in addition to those under RIPS are also provided through this policy. These include incentives for quality & certification, incentives for research & development, and transport subsidy on export of spices, etc.

**b. MSME Policy, 2015**
- Encourages investment in MSMEs and enables a helpful environment for such enterprises.
- Enables streamlining of rules and regulations, provides financial and market support, land allotment and awareness programs.
- Policy also ensures that all fiscal benefits and incentives to MSMEs shall be available as per provisions of the RIPS (2014).

**c. Startup Policy, 2015**
- Policy has three major pillars: Student support, student entrepreneur support and incubation support for both fiscal and non-fiscal benefits.
- Key focus areas include social and clean-technology, IoT, mobile and information technology.

**d. Rajasthan Investment Promotion Scheme (RIPS), 2014**
- Promotes investments made by enterprises in establishing new units, expansion of existing units and investments made in reviving sick units.
- Agro-processing and agri-marketing are thrust sectors under the scheme and are afforded higher incentives and subsidies including:
  - Investment, Interest and Employment generation subsidies.
  - Number of marketing reforms have also been adopted in areas such as contract farming, e-Trading, direct purchase, single licenses for operation throughout the state, establishment of private mandis, among others.

**e. Rajasthan State Agriculture Policy, 2013**
- Aims to ensure food and nutritional security, farm prosperity and to strengthen agrarian economy.
- Basic goal is to strive for doubling the production of food grains in 10 years and a minimum of 4% agricultural growth every year.
- Some of the areas where initiatives are being undertaken include:
  - Food security
  - Management of land resources
  - Water management
  - Availability of quality seed and planting, etc.

These policies, along with other such measures implemented provide a business-friendly environment for investors.

The geographical location of Udaipur is uniquely favourable and offers strengths and opportunities for development of the agri value chain.

Its agro-climatic conditions, good rainfall, robust irrigation system, high yielding varieties of horticulture and agriculture crops and indigenous milk yielding breeds of cattle offers significant opportunities.

The yields of the key crops grown in the division are above the national average yield and hence, this division is not only emerging as a leader within the state, but is gaining prominence at a national level.

The division provides investment potential in the following areas:
- Storage facilities including cold chain infrastructure
- Establishment of procurement centers for organized retailers
- Farm machinery manufacturing units and establishment of custom hiring centers
- Processing of crops like wheat, paddy, coriander, garlic, soybean and orange
- Dairy processing (milk as well as value added products)
- Poultry and apiculture
- Agro-forestry and Agri-tourism

Additionally, the division has an evolved farmer base who are continuously involved in increasing their know-how of latest agri techniques and technologies. The presence of agri-research, training institutes and COEs provides opportunities for new crops and yield improvement.

Its strategic location, good infrastructure and well-equipped agro marketing facilities offer ease and convenience from a business standpoint.

The Rajasthan Government is taking keen interest in Udaipur and is undertaking several efforts in terms of business-friendly policies to create an enabling business environment.

The key sectors of the agri value chain are on a growth trajectory and offer abundant opportunities that would not only benefit the prospective investor significantly, but would also result in the holistic development of the farmers of the ‘Mewar’ region.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>–</td>
<td>Approximately</td>
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<tr>
<td>Agri</td>
<td>Agriculture / Agricultural</td>
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<td>CAGR</td>
<td>Compound Annual Growth Rate</td>
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<td>CoE</td>
<td>Centre of Excellence</td>
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<td>eNAM</td>
<td>Electronic National Agriculture Market</td>
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<td>FPO</td>
<td>Farmer Producer Organization</td>
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<td>Financial Year 2016</td>
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<td>GoR</td>
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<td>INR</td>
<td>Indian Rupees</td>
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<td>IoT</td>
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<td>Kg</td>
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<td>Million</td>
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<tr>
<td>MSME</td>
<td>Micro, Small and Medium Enterprise</td>
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<td>MT</td>
<td>Metric Tonnes</td>
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<td>MT/ha</td>
<td>Metric Tonnes per Hectare area</td>
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<td>NAIS</td>
<td>National Agricultural Insurance Scheme</td>
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<td>Participatory Guarantee Scheme</td>
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<td>Paramparagat Krishi Vikas Yojna</td>
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<td>RCDF</td>
<td>Rajasthan Cooperative Dairy Federation</td>
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<td>RIPS</td>
<td>Rajasthan Investment Promotion Scheme</td>
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<td>Scheduled Caste/ Scheduled Tribe</td>
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<td>TBO</td>
<td>Trade Brand Oil</td>
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<td>Weather Based Crop Insurance Scheme</td>
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<td>mm</td>
<td>Millimetres</td>
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