ANALYSIS OF EXPENDITURE DISTRIBUTION (2012-2015) OF RAJASTHAN COUNCIL OF SCIENCE AND TECHNOLOGY

A REPORT BY

Group 02

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ANALYSIS OF EXPENDITURE DISTRIBUTION (2012-2015) OF RAJASTHAN COUNCIL OF SCIENCE AND TECHNOLOGY

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Sincerely

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ABSTRACT

Looking at the ever-increasing technological advancements of the world and a dire need for the world to adapt to these are essential. For a state like that of Rajasthan with ample natural resources and ample land it is not utilizing the entire potential. Investing in technological development projects can provide significant advantages for a state or government. Such initiatives drive economic growth, productivity gains, and improve global competitiveness through innovation and new technological solutions. They foster job creation, especially in high-skilled sectors like engineering and computer science, while also building valuable technical capabilities within the local workforce. Additionally, these projects can address pressing societal challenges related to health care, education, environment, and infrastructure by leveraging technological advancements. States that prioritize technological development can position themselves as scientific leaders, attract top talent and investment, and potentially enhance national security through advancements in areas like cyber security and defense technology. Overall, well-planned technological development projects can yield substantial economic, social, and strategic benefits for a nation. The government of Rajasthan, more specifically the Rajasthan Council of Science and Technology, had presented an expenditure increase in the technological development of Rajasthan.

This report covers the expenditure spend by the RCST in the duration of year 2012-15.

INTRODUCTION

To:

Chairman,

RCST, Jaipur

Subject: Analysis of Expenditure Distribution (2012-2015)

As the Secretary of the Rajasthan State Council for Science and Technology (RCST), I have conducted an analysis of the expenditure distribution for the years 2012 to 2015. The data provided in the table shows the percentage distribution of expenditure incurred by the Council during this period.

This report covers the expenditure spend by the Rajasthan Council of State and Technology (RCST) towards the technological development of the state of Rajasthan between the years of 2012-2015.

S.No	**Items**	**2012-13**	**2013-14**	**2014-15**
1	Major Projects	36.7	40.6	44.5
2	Development Programmes	36.3	50.4	48.4
3	Secretariat and Travel	23.3	8.3	6.3
4	Building and Equipment	3.7	0.7	0.8
	Total	100.0	100.0	100.0

Technological developments within a state can bring about significant benefits, including economic growth driven by increased productivity and innovation, enhanced competitiveness in domestic and global markets, improved infrastructure and connectivity, attraction of foreign direct investment, development of human capital through education and training, advancements in healthcare services, and potential environmental benefits from clean technologies. However, realizing these advantages requires a supportive policy environment, investment in research and development, collaboration between stakeholders, and a skilled workforce capable of adapting to and leveraging new technologies.

RAJASTHAN STATE COUNCIL OF SCIENCE AND TECHNOLOGY

Figure 1: Logo of RCST

"In a world dominated by Science and technology, Science communication and Popularization is of utmost importance especially for a country like our where a large population needs to be told about the impact of science and technology in their daily lives"

- Dr.A.P.J.Abdul Kalam

ABOUT

The Department of Science and Technology was founded in 1983 to foster scientific interest in society and to improve the socioeconomic position of the masses, particularly in rural areas and the weakest sections of society, by science and technology.

The department was set up to address the state's scientific and technology needs and take the required steps to promote the use of science and technology to improve the state's socioeconomic standing. The department's various projects and activities are carried out by well-established regional offices in Ajmer (HQ Jaipur), Bikaner, Kota, Jodhpur, and Udaipur.

OBJECTIVES

i. To encourage the application of science and technology for socioeconomic goals to solve issues like poverty, unemployment, and backwardness, especially in rural areas.

ii. Encourage scientific research in universities and academic institutions, recruit new people and provide job opportunities in science and technology related fields.

iii. Initiate and coordinate important research and development projects, including the examination of novel areas such as nanotechnology and biotechnology.

iv. Popularize science and nurture a scientific temperament through Science City/Science Centers /Science Parks.

v. Collaborate with national and international scientific institutions to transfer and replicate successful innovations.

vi. Create natural resource databases using GIS and remote sensing techniques.

RAJASTHAN STATE TECHNOLOGICAL DEVELOPMENTS UP UNTIL 2012

Rajasthan, a state in northwestern India that covers 342,239 square kilometers (about the area of California), or 10.4 percent of India's total geographical area. It is the largest Indian state by area and the seventh largest by population. Up until 2012, Rajasthan has made significant technological advances, particularly in infrastructure, information technology, and renewable energy.

1) Research and Development (R&D): The department provided funding for R&D projects in several fields, such as renewable energy, healthcare, and agriculture. It aided academic institutions and research centers in carrying out investigations to address local issues and encourage creativity.

2) Programs for Renewable Energy: RCST, also focused on solar and wind power to promote business and communities to embrace renewable energy, it supported solar parks, research projects on solar energy technologies, and public awareness campaigns.

3) Technology for Water Management: Due to the arid climate and water constraint in Rajasthan, the department developed effective water management technologies. To boost the availability of clean water in both rural and urban areas, the department also set up drip irrigation systems and water purification technology.

4) Biotechnology and Agriculture: The agency supported biotechnology projects that aimed to increase agricultural production and sustainability. Drought-resistant crop varieties, biofertilizers, and biotechnological interventions for pest management and soil health enhancement were among the initiatives undertaken.

5) Information Technology Infrastructure: The department also collaborated with other government departments and business stakeholders to construct Rajasthan's information technology infrastructure. This included establishing IT parks, incubation centers, and giving support for IT training and skills.

OVERVIEW OF TECHNOLOGICAL DEVELOPMENTS DURING 2012- 15

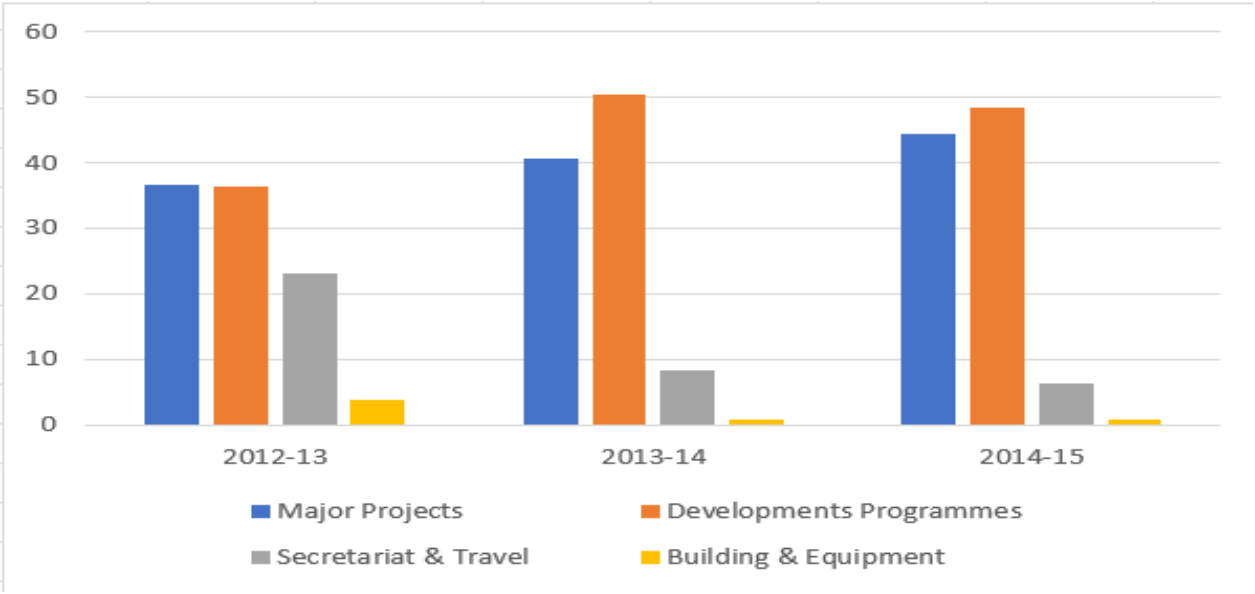

FIGURE 2: PERCENTAGE DISTRIBUTION OF EXPENDITURE

The period from 2012 to 2015 witnessed a continued emphasis on addressing district-specific challenges through major projects:

- **Information and Communication Technology (ICT):** While some districts, like Kota, implemented projects like "Khelo Kitab, Badhao Digital Gabhila" to bridge the digital divide through computer labs and literacy programs, others might have focused on mobile internet connectivity solutions.
- **Biotechnology and Agriculture:** Districts like Bikaner, facing water scarcity, might have seen projects on drought-resistant crops through collaborations with agricultural universities. Conversely, districts known for horticulture could have seen advancements in biofertilizers.
- **Renewable Energy:** Jodhpur, with its high solar potential, might have undertaken large-scale solar power plant installations, while Jaisalmer, known for wind, could have explored wind energy solutions.
-

2) DEVELOPMENTS

The collaborative approach gained momentum between 2012 and 2015:

- **FASAL** – Fasel stands for forecasting Agricultural Outputs using Space, Agro-meteorology and Land-based observation. This utilizes a combination of space-based data, agro-meteorological information, and land-based observations to forecast agricultural outputs at various stages of the crop cycle. It stimulates crop growth based on weather data and other factors to predict potential yields.

- **NWIA** – This stand for National Wetland Inventory and Assessment which successfully mapped and assessed the extent and changes in wetlands across India. This data is crucial for wetland conservation and management. Alongside that it creates a comprehensive and updated database of wetlands in India compared to the initial NWIA project conducted in the late 1990s.'
-

3) SECRETARIAT & TRAVEL

- These development programs where majorly run under the Delimitation Commission for each state, following parliamentary legislation. The updating of the maps under the above programs is majorly achieved by this commission and it updates ECI to publish official Parliamentary and Assembly Constituency maps. In addition to this the CEO (Chief Electoral Officer) Rajasthan website holds a dedicated section containing the latest Village level satellite maps.

4) BUILDING & EQUIPMENT

- **Stable access to power:** Technology cannot thrive without a reliable source of power. Rajasthan would have made major investments in power generation through power plants, transmission through high power electric cables, and power from renewable sources to assure continued supply of power to industries and towns.

- **Research and Development Facilities**: Sound R&D establishment is a fundamental companion to technological prosperity. Rajasthan too would have made major investments in creating R&D hubs and laboratories for all areas including agriculture, health, and renewables.

SCIENCE AND TECHNOLOGICAL DEVELOPMENT: RAJASTHAN VS. OTHER INDIAN STATES (2012-2015)

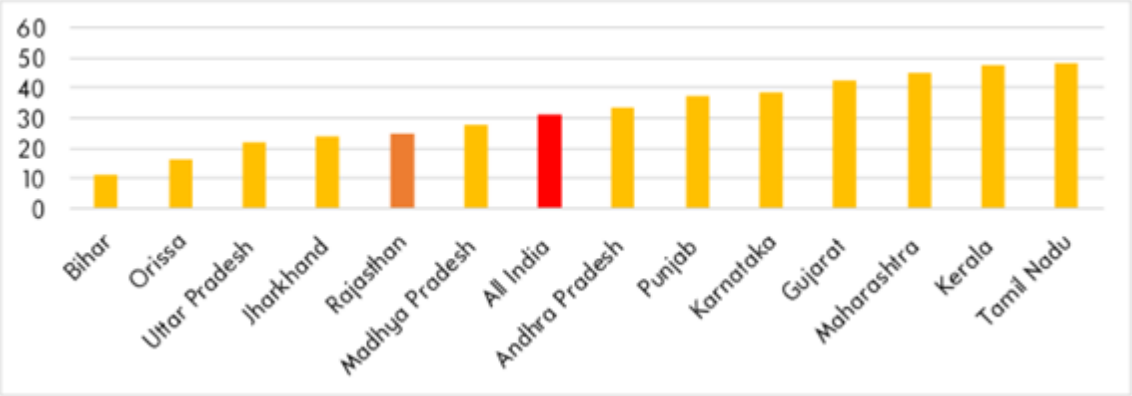

FIGURE 3: DEVELOPMENT INDEX

This section compares advancements in science and technology between Rajasthan and other Indian states during the period 2012-2015.

1) Major Projects

National Trends: Many states focused on Information and Communication Technology (ICT) initiatives like computer labs and digital literacy programs. Others prioritized areas like biotechnology or renewable energy based on their unique needs and resource availability. Some notable examples include:

- **Andhra Pradesh:** Mission for Innovation in Agriculture (MIA) to promote climate-resilient agriculture.
- **Karnataka:** Bio-fuel Mission focusing on production of ethanol from sugarcane.
- **Gujarat:** Large-scale solar power projects like the Surya Gujarat Mission.

Rajasthan: Similar to the national trend, Rajasthan likely continued its push for bridging the digital divide through ICT projects. However, the state also saw advancements in areas like:

- **Biotechnology:** Investments in research facilities and collaborations with agricultural universities might have led to advancements in areas like disease-resistant crops or biofertilizers relevant to Rajasthan's specific agricultural needs.
- **Renewable Energy:** Districts with high solar potential saw a rise in solar power projects, while windier regions explored wind energy solutions.

Table 1: Comparison of Major Projects (2012-2015)

State	Major Project Examples	Focus Area
Andhra Pradesh	Mission for Innovation in Agriculture (MIA)	Climate-resilient agriculture
Karnataka	Bio-fuel Mission	Ethanol production
Gujarat	Surya Gujarat Mission	Solar power
Rajasthan	ICT initiatives (e.g., digital literacy programs)	Bridging the digital divide
Rajasthan	Advancements in biotechnologies (e.g., disease-resistant crops)	Agriculture
Rajasthan	Renewable energy projects (e.g., solar power)	Clean energy

1) Developments:

National Trends: Public-Private Partnerships (PPPs) and industry collaborations emerged as key drivers of science and technology advancements across India. Some examples include:

- **Maharashtra:** PPP for setting up a world-class research institute focused on nanotechnology.
- **Tamil Nadu:** Collaboration between an automobile company and a university for research on electric vehicle technology.

Rajasthan: The state embraced this trend with:

- **PPPs (Private To Public Partnerships) :** Collaborations with private entities might have facilitated projects like state-of-the-art medical diagnostic centers or modern waste management facilities.
- **Industry Collaborations:** Partnerships between universities/research institutions and local industries fostered innovation that addressed regional industrial needs.

2)Secretariat & Travel:

National Trends:

Many states established regional offices or science and technology councils to improve outreach and collaboration with various districts.

Rajasthan: The state might have continued its efforts to improve outreach through regional offices established earlier.

2) Building and Equipment:

National Trends: Investments in building and upgrading research infrastructure were observed across India:

- New research facilities were established in areas relevant to the state's specific needs.
- Existing facilities receive funding for upgrading equipment or expanding research capabilities.

Rajasthan: The state continued its investments in research infrastructure:

- New research facilities focused on areas relevant to the district's needs, like water desalination research units in coastal districts or mineral processing facilities in mineral-rich areas.
- Existing facilities in various districts might have received funding for upgrading equipment or expanding research capabilities.

3) Other Developments

National Trends: An increased focus on data-driven decision making and promoting a scientific temper was observed across India:

- Monitoring and evaluation of ongoing projects helped assess their impact and identify areas for improvement.
- Data collection and analysis provided a deeper understanding of the scientific and technological landscape in each state.
- Initiatives like science fairs, scholarships for science students, and teacher training programs in science communication were undertaken.

Rajasthan: The state adopted similar practices to refine its science and technology strategies for future advancements.

CONCLUSION

RCST's Impact on Rajasthan's Development (2012-2015): An Analysis

Chairman, RCST

This report analyzes the funding impact of RCST (2012-2015) on science and technology development in Rajasthan.

- Successes:
  A holistic approach that combines renewable energy, agriculture, information technology and the environment has led to projects such as the digitization of protected areas and the monitoring of agricultural residue burning.

- Strengths:
  Rajasthan's approach is characterized by a focus on public-private partnerships to promote innovation and resource efficiency.

- Recommendations:
  Data-driven policy: Create a dedicated data analytics department within RCST to optimize resource allocation.

  Evidence-based action: Strengthen collaboration with research institutions to build a solid evidence base for future initiatives.

By adopting these recommendations, RCST can cement Rajasthan's leadership in India's technology sector and contribute to the country's prosperity.

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