



Government of Rajasthan



## ORGANIZATION

**Department of Information  
Technology & Communication**

## LOCATION

Jaipur, India

## SOFTWARE

AutoCAD® Map 3D

AutoCAD® Civil 3D®

Autodesk® Infrastructure Map Server

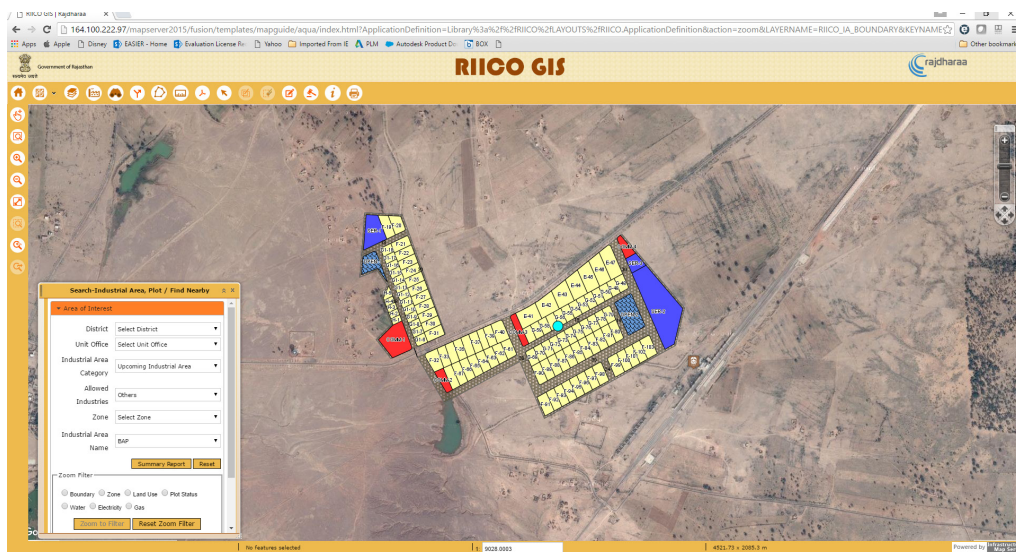
Autodesk® Infraworks® 360

# Land bank management system for RIICO

## RIICO GIS - A single stop any-time any-where Land Bank Management system for 'Rajasthan State Industrial development & Investment Corporation'

"Our aim is to enhance the experience we provide to the investors/entrepreneurs and initiatives like these are a timely response that has the potential to start a movement and promote growth. Initiatives like this put together with 'Make in India' campaign can work wonders for the industries in Rajasthan,"

—Y.K Jain  
Jt Director  
DoIT&C



RIICO GIS Web portal built on AIMS - Image Courtesy: RIICO

**The Project:** <http://www.gis.rajasthan.gov.in/riico/>

With nearly 58% of Delhi Mumbai Industrial Corridor (DMIC) passing through Rajasthan, opportunities for industrial establishment along the route are eminent as the corridor makes Rajasthan easily accessible to western and northern markets. Also, as about 50% of the State's area including major districts such as Jaipur, Marwar and Phulera falls under the project influence area, Rajasthan has become an attractive destination for investors. Availability of skilled manpower, vast resource of land and industry friendly environment also makes it an investment haven.

Banking on these aspects and with an aim to further boost industrial development and promote Rajasthan as an investor friendly state, Rajasthan State Industrial Development & Investment Corporation Limited (RIICO) came up with a Geographical Information System (GIS) enabled Enterprise Land Bank Management System under Rajdharaa – the state-wide Geospatial decision support system of the Government of Rajasthan. Now, investors can get all the necessary information before investing in a land directly from the RIICO GIS Portal.

"RIICO has been continuously working to provide the best facilities to help industrial growth. This GIS enabled system was created with an aim to further boost investment by providing better service to the potential investors and entrepreneurs," said Veenu Gupta (IAS), Former Managing Director, RIICO.

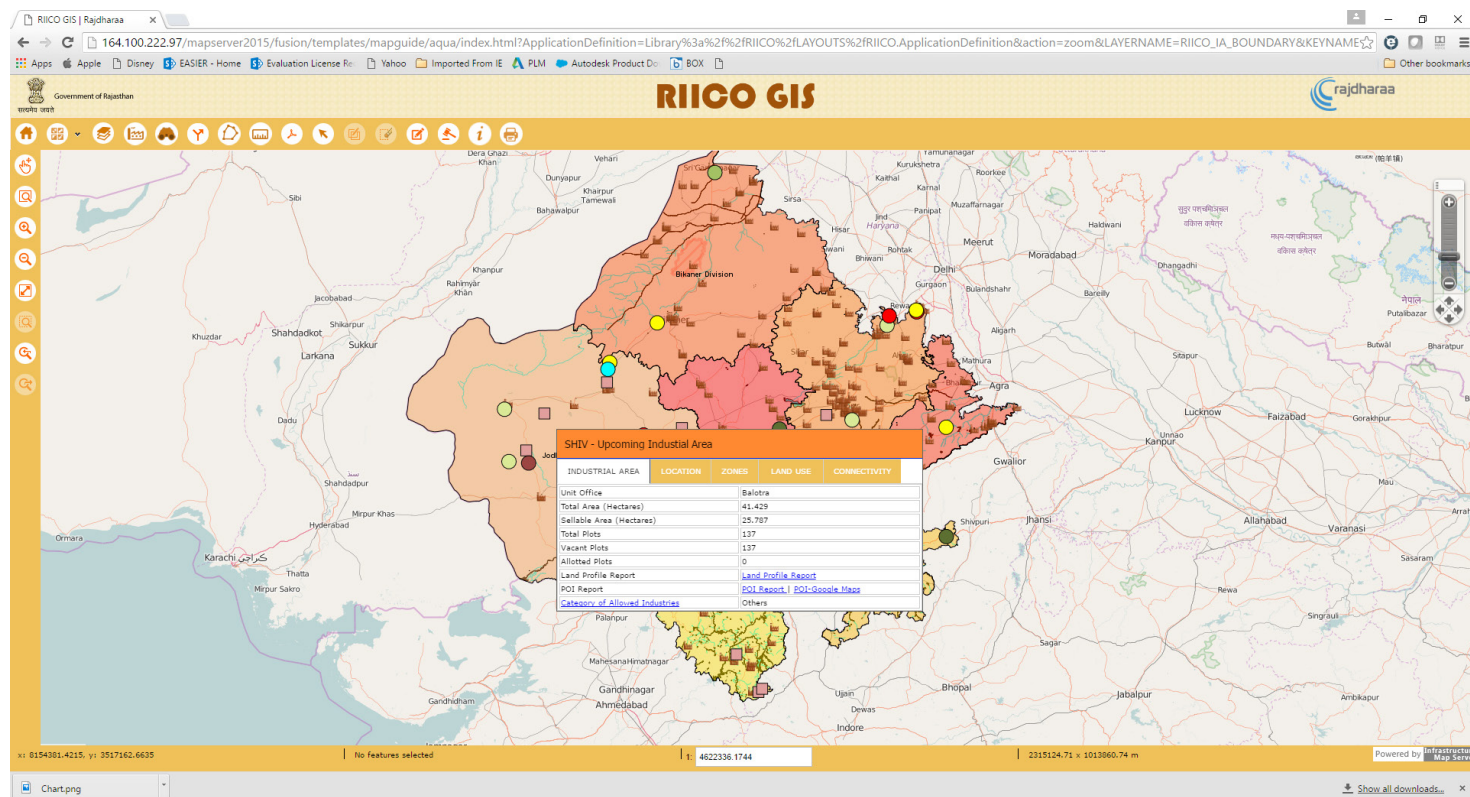
RIICO that has been in the forefront to drive industrialisation in Rajasthan has not only helped to set up industrial areas, but also acts as a financial institution by providing loan to large, medium and small scale projects.

### Project objectives:

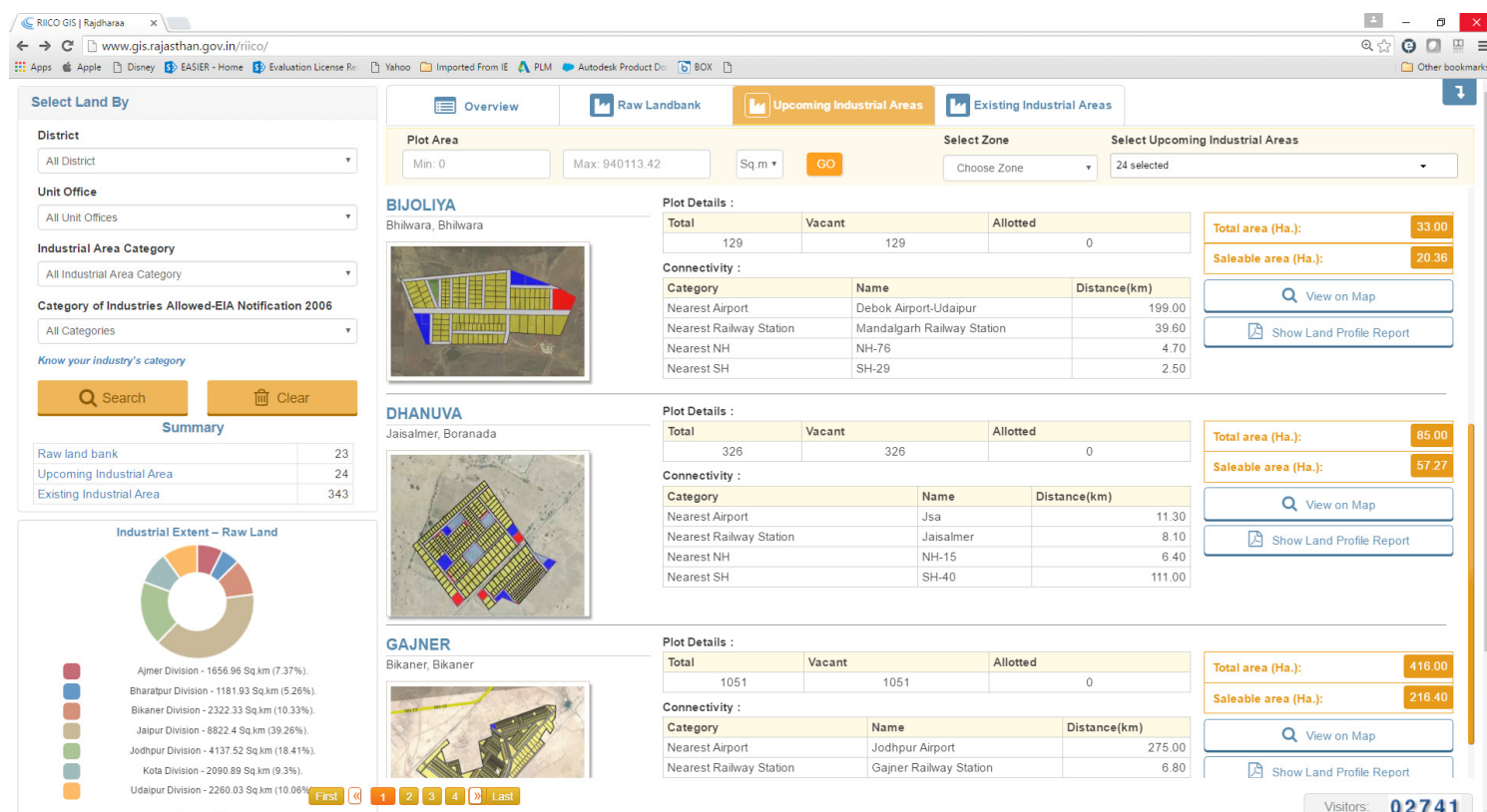
- To utilize the power of GIS and identify new land banks for development of industrial area.
- To undertake planning decisions for development of necessary infrastructure of the identified new land banks.
- To monitor progress of various industrial development activities in the existing industrial area on an integrated GIS platform.

The system is created keeping all the requirements of an investors in mind. This GIS enabled system will help the potential investors select the right location without any hassles.

## Project implementation framework



RIICO GIS portal with flexible investor oriented queries - Image Courtesy: RIICO



Dashboard of RIICO GIS portal which provides complete view on investments and land availability as per Upcoming, Existing and Raw land bank - Image Courtesy: RIICO

Rajasthan is one of the top investment hubs and initiatives like these will further boost our image of being an investment friendly state. This is just the beginning, we have plans to further enhance the facilities and provide the best possible amenities to the investors.

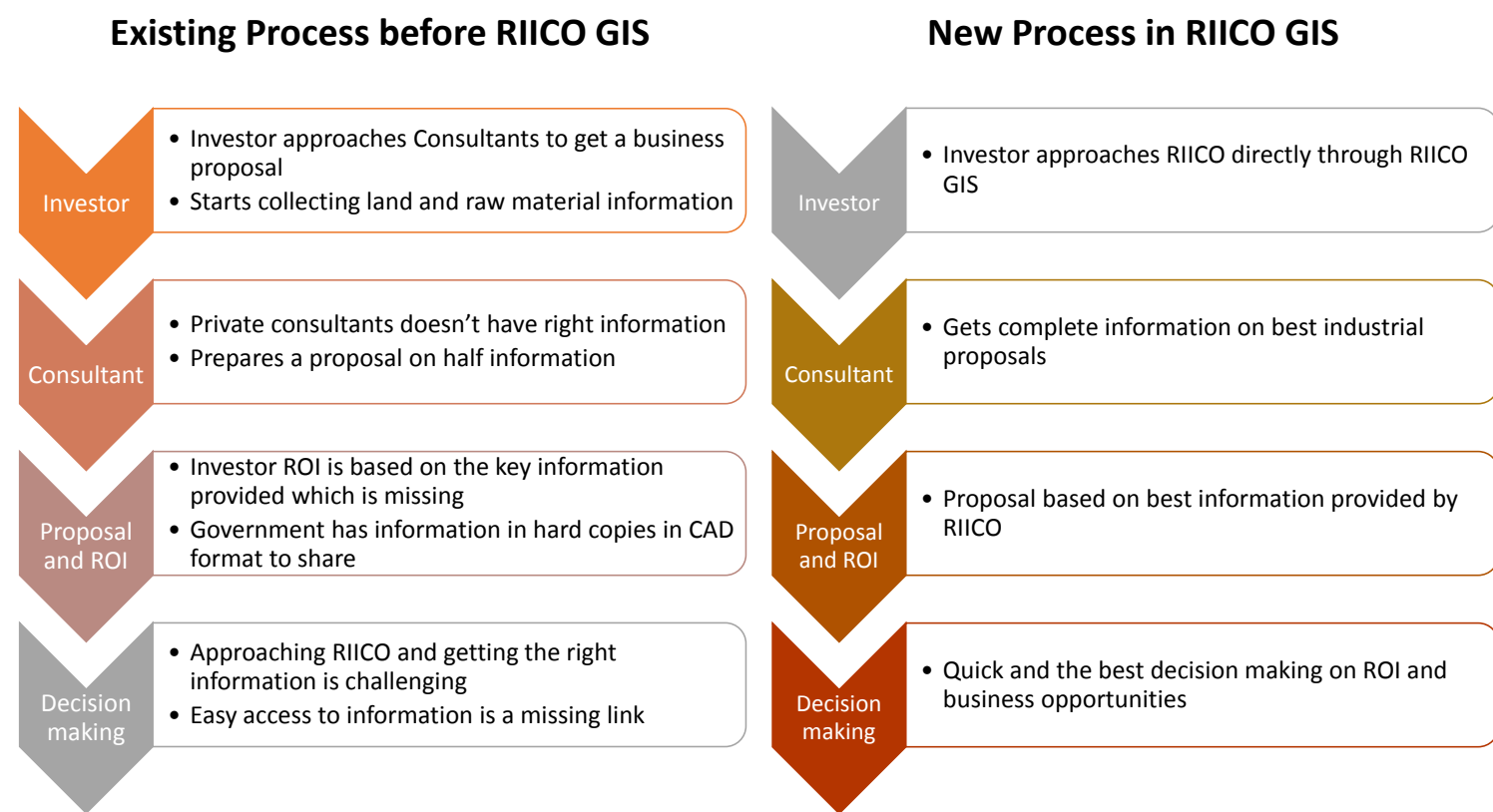
Rajasthan has 24 raw land banks, 23 upcoming industrial areas and 343 existing industrial areas and all the layouts and information was on paper and many of them had multiple revisions. The system integration of RIICO GIS based Land Bank Management Application with Rajdharaa will ensure smooth functioning and provide better service to the potential investors. It was also proposed to integrate the RIICO Land Management Application with RIICO GIS based Land Bank Management application to provide seamless experience to both investors and departmental users.

The system was implemented in phased manner to facilitate the senior decision makers from RIICO, in effective policy planning, decision making and monitoring of various industrial development activities across the State.

"RIICO has been working continuously to provide the best facilities to help industrial growth. As there was no information regarding the upcoming projects of RIICO or about future development, this system was created," Sanjay Waghmare, Senior Town Planner, RIICO.

As Rajasthan has emerged as an attractive destination for investors in the past few years, RIICO's latest initiative, the web based Enterprise Land Management System aims to ensure complete infrastructural support to all developing industries and facilitate easy procedures maintaining total transparency.

## The Challenge



Before and After process work-flow for investors. RIICO GIS portal provides easy access to investor oriented information always required from the department. - Image Courtesy: RIICO

Rajasthan is the largest state in terms of area and is home to 27 unit offices where each unit office takes care of 2-3 districts. "By creating this system we wanted to provide the investor an opportunity to search for the best possible option," said Tapan Kumar, Deputy Director, DoIT&C.

To create this system, it had to be ensured that all the paper drawings are reflected on the web based GIS system so that entrepreneurs can search for their desired piece of land using different search criteria and identify the location in which they want to setup their industry. Other challenges included GIS Data Model preparation to enable integration with MIS Data Model, modification of Industrial Area Maps to conform to GIS Data Model and training RIICO staff to move away from paper based system to Web GIS.

Keeping this in mind RIICO approached the Department of Information Technology & Communication (DoIT&C) that has been working to put technology to its highest and best use throughout Rajasthan Government Departments and autonomous bodies to improve the administration of State programmes and services.

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## The Solution

RIICO with its functional knowledge of creating the layouts and DoIT&C with its subject matter experts, consultants and policy consultants took charge of entire project management for this particular application. RIICO was responsible for providing the functional requirements which was further translated by DoIT&C with the help of Autodesk GIS team.

"One of the fundamental works was to convert the print layouts into GIS drawings. AutoCAD Map3D was used to convert the physical drawings into electronic drawings and subsequently position them at the right place on the map," Sanjay Bhattacharya, Principal Consultant, DoIT&C.

Since the RIICO Engineers were already familiar with AutoCAD, with some training they were able to handle the AutoCAD Map3D and more critical functionalities like georeferencing and

further uploading all this data into Oracle Spatial SDO.

Georeferencing is the process of assigning real-world coordinates to each pixel of the raster. As AutoCAD Map3D is equipped with Google and BING maps by default, it made the process easy. After the layout was done the reference GPS coordinates were checked on field. These GPS coordinates were positioned into digitalised drawings on either Google or BING maps.

Once the data was georeferenced the output was still in physical file format called DWG. After the layout of the Industrial Area was finalised using AutoCAD Map3D, it was published on Rajdharara -- state-wide Geo-spatial decision support system.

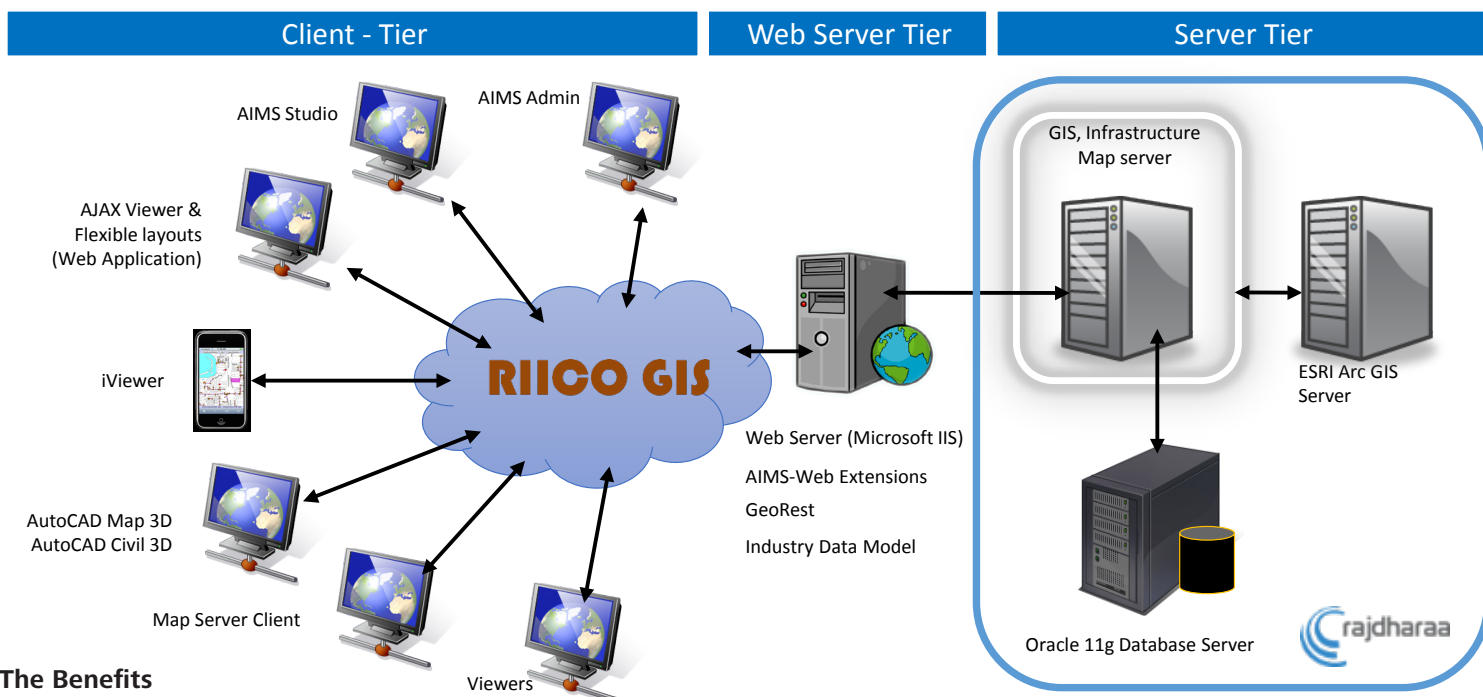
Later, the Oracle database was merged with RIICO's existing MIS database to provide comprehensive information about the plots. The MIS database system had all the information about the plots like name of the industrial area,

zone, price, plot location and many more so the Oracle database was connected to the MIS database through a common ID. This further helped Oracle and MIS to access data from both the platforms, making it more comprehensive.

Once the desktop GIS process is done the information had to reflect on the web server and to do this Autodesk's Infrastructure Map Server was used. The Infrastructure Map Server helped both the data available on Oracle data base and MIS database to get displayed on the Web.

The Autodesk team also used Google map to provide the information about surroundings like roads, airports, railway station, educational institutes, hospitals, parks and banks among others. RIICO made this information available in integration with Google maps. Proximity analysis was also done which informed about the number of things available nearby, the distance and road map from any selected location.

## Solutions Architecture



## The Benefits

The GIS enabled land management system will:

- Act as a single source of information, bringing in more transparency
- Help raise the Ease of Doing Business (EODB)
- Digitize, publish on Web GIS 23 raw land banks, 24 upcoming industrial areas and 343 existing industrial areas
- Faster turnaround time in providing services to entrepreneurs/industrialist
- Improve synergy between RIICO departments such as Planning, Engineering, Marketing and Finance reflecting overall efficiency
- Help faster decision making by RIICO management with the help of up-to-date dash boards and reports

"Autodesk helped us connecting MIS/GIS together as it requires a viable IT system," added Harish Vijaywargiya, GM-IT, RIICO.

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### Solution platform

Components of Enterprise Web GIS Architecture	
GIS Server	Autodesk Infrastructure Map Server, Arc/GIS Server
Planning tools	AutoCAD Map3D, Civil3D
Database	Oracle 11g (SDO)
Data Access Components	FDO to read SHP, ArcSDE, DWG accessed in native formats
Web Server	IIS Microsoft
3 <sup>rd</sup> Party Maps/APIs	Google Maps, Here Maps
Development	PHP, HTML5, Java Script

Image Courtesy: RIICO

### The Road Ahead

**Honourable Chief Minister of Rajasthan, Ms. Vasundhara Raje Scindia** recently said that steps taken by her government like creating an investor-friendly atmosphere, labour reforms, strengthening of infrastructure and ensuring ease of doing business among others have propelled Rajasthan to the “frontline of investment destinations” in the country – Source as PTI.

As ‘Make in India’ campaign gathers momentum, measures like these with support from bodies like RIICO will surely help Rajasthan become a leading investment destination.

### About RIICO

Rajasthan State Industrial Development & Investment Corporation Limited (RIICO) has pioneered industrialisation of Rajasthan by setting up industrial areas. RIICO also acts as a financial institution by providing loan to large, medium and small scale projects. RIICO has set up 27 Regional Offices all over Rajasthan to administer the development and management of the industrial areas.

### About Rajdharaa

To promote good governance, sustainable development, citizen empowerment and to maintain standard GIS Assets, the state-wide GIS based decision support system popularly known as Rajdharaa has been created. Rajdharaa consist of policy, framework, software application, data, modelling and methods that deals with spatially referenced and geographically tagged / linked data / information as well as non-spatial data for undertaking multi-dimensional and inter-sectoral planning initiatives in a structured manner.

Besides Industrial Land Banks, Government of Rajasthan wants to publish all the Land Banks required for undertaking Residential as well as Commercial activities by Development Authorities, UITs, ULB etc.

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