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COASTAL AGRICULTURAL INFORMATION SYSTEM (CAIS): AN ONLINE GEOPORTAL

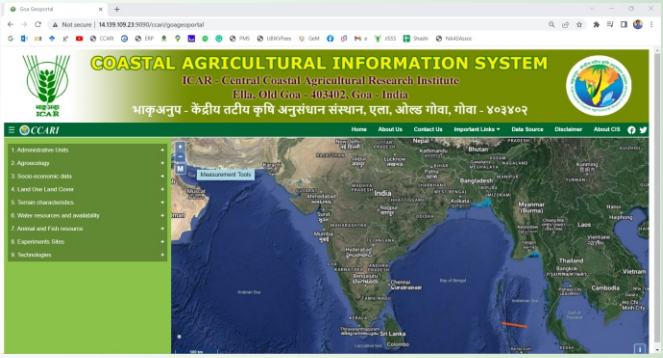
Technology developed by : Dr. S. K. Singh, ex-Principal Scientist (Soil Science), ICAR-CCARI, Goa
Dr. Gopal Ramdas Mahajan, Sr. Scientist (Soil Science)
Dr. Sujeet Desai, Scientist Sr. Scale (Land and Water Management Engineering)
Dr. Bappa Das, Scientist Sr. Scale (Agricultural Meteorology)

PROBLEM AND RESEARCH GAP

The coastal region is among the most vulnerable ecosystems between water and land mass and faces multifaceted challenges of climate change, demographic pressure, urbanization, poor agricultural productivity, etc. Owing to the contribution of this ecosystem to support the population, agricultural and allied sectors, it is utterly necessary to inventorize the resources to plan for sustainable development of the region. Easily accessible information in a dynamic form could be pivotal in this regard. Thus, a scientific resource inventory as a digital tool is needed to cater to the research and development issues of the region. The technology product aims to provide information on coastal agriculture and resources for planning research and policy-decision for sustainable development of the coastal region. To fulfill this need, an online and interactive Geoportal called the 'Coastal Agricultural Information System (CAIS)' was developed.

PARTICULARS AND SALIENT FINDINGS

An online and interactive Geoportal 'Coastal Agricultural Information System (CAIS)' was developed. CAIS compiled a comprehensive dataset of over 300 parameters, encompassing various aspects such as socio-economics, land use, livestock utilization, crop production, land degradation, water resources, wastelands, salt-affected soils, climate, and rainfall for coastal districts. This dataset served as the foundation for CAIS and allowed for the display of different parameters based on administrative boundaries of coastal states, districts, and blocks. Additionally, CAIS included information on coastal regions categorized by districts, physiographic regions, agroecological regions, coastal landforms, and 50 to 100 km buffer boundaries. The development of CAIS involved the utilization of remote sensing data ranging from fine to coarse resolutions, digital elevation models, published maps, and other relevant data sources. The database within CAIS was structured using ArcGIS and QGIS, arranging information in the form of polygons, lines, and points, and was made accessible to stakeholders through an open-source GeoServer. The CAIS database was systematically organized into ten categories, covering administration, agroecology, terrain characteristics, land use and land cover (LULC), socio-economics, water resources, fish and animal resources, experimental sites, outreach programs, and linkages. Moreover, CAIS facilitates seamless interoperability between open pages, allowing for the integration of data and agro-technology to develop an innovative agribusiness framework in conjunction with existing natural resource information. The CAIS geoportal stands out as an exceptional platform, as there is no other dedicated geoportal currently available specifically focusing on coastal agriculture, livestock, and fisheries. The uniqueness of the CAIS lies in its ability to integrate data and information from various agricultural and allied sectors, taking into consideration the socio-economic and environmental factors.



User interface of CAIS Geoportal

IMPACT

The portal has been viewed for more than 6000 times all across the country and world. Training and capacity-building programmes are organized time to time to sensitize the concerned stakeholder. The stakeholders of the CAIS are diverse and include research Institutes/organizations undertaking research on coastal agriculture, livestock, and fisheries, State Agricultural Universities of the coastal region, State Line Departments of the coastal states, Farmers of the coastal region, Students and research scholar, Entrepreneurs, Data scientists and specialist, Development agencies, NGO's, etc. The technology indirectly contributes to saving of water, labor, time and energy by means of appropriate allocation of resources based on the detailed information on the site of research, demonstration, transfer of technology, etc. The detailed information in the geoportal on the soils, digital elevation, drainage lines, river basin, rainfall, etc. would be pivotal to make decisions by stakeholders on appropriate conservation measures. CAIS has the capacity to detect prospective regions for to produce high-quality cereals, plantations, spices, and carbon sequestration. This ability has the potential to draw in investors, managers, youth, and farmers, enticing them to engage in a novel, lucrative, and environmentally responsible agribusiness framework.

REFERENCES

- CAIS (2022). Coastal Agricultural Information System (CASI, ICAR- Central Coastal Agricultural Research Institute, Old Goa, link - http://14.139.109.23:9090/ccari/goageoportal , last accessed on 28-05-2023