

A scenic landscape featuring a calm lake in the middle ground, surrounded by dense forests with vibrant autumn foliage in shades of orange, yellow, and green. In the background, rolling mountains are visible under a soft, hazy sky. The overall atmosphere is peaceful and natural.

Beijing Datum Technology Development Co., Ltd

<http://www.swccinfo.com>

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Introduction

Chinese leading provider of
geographic information service
and eco-environmental
engineering consulting.

Leading Position in Industry

- 10+ national professional qualifications
- Vice chairman unit of China Association for Geographic Information Society
- Entity operating unit of Digital Basin Center, Institute of China, Peking University(DBC)



Leading Position in Industry

- 20+ national and provincial awards
- 8 Standards made by Datum have been recommended as industry standards
- 3 platforms developed by Datum have been widely used in 5 level water conservancy sectors



Strong Technology Innovation

- 50+ patents and 20+ computer software copyrights
- Experts from Chinese Academy of Sciences, Peking University and Tsinghua University guide Datum
- Undertake or participate in 10+ national scientific projects

1 Intellectual Property

2 Expert Team

3 National Major Projects





Main Business

- ✓ Geographic Information Service
- ✓ Eco-Environmental Engineering Consulting
- ✓ Core Technology Research

Geographic Information Service



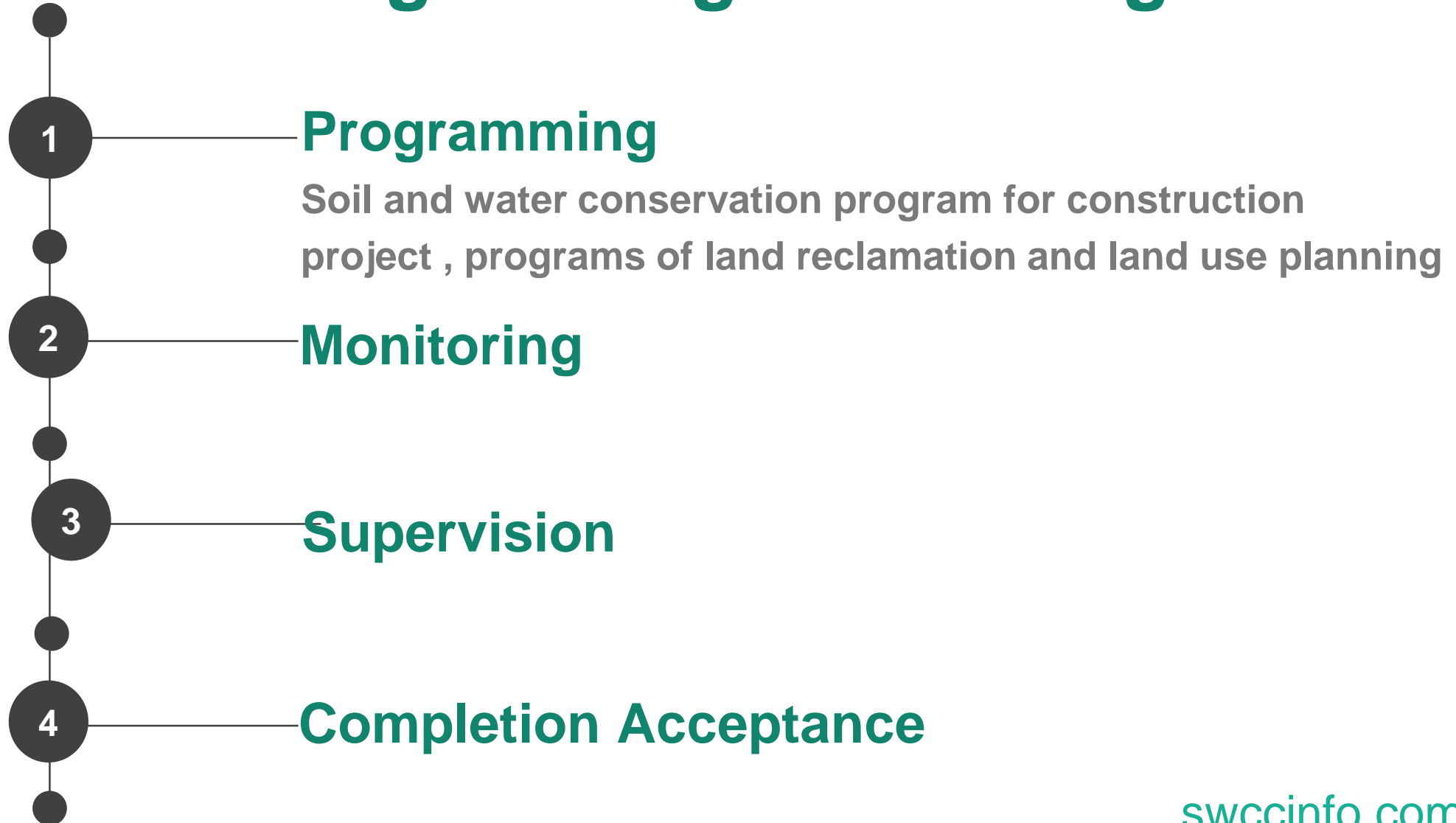
Key Project Management System
of National Soil and Water
Conservation

Project Management System
of Comprehensive Control of
National Soil and Water
Conservation

Key Management System
of Soil and Water
Conservation in Beijing



Eco-Environmental Engineering Consulting





Core Technology Research

Rapid extraction of soil and water conservation monitoring and evaluation indexes of **construction projects**

1

2

Rapid extraction and calculation of water erosion quantitative monitoring and evaluation indexes

Rapid extraction of soil and water **conservation measures**

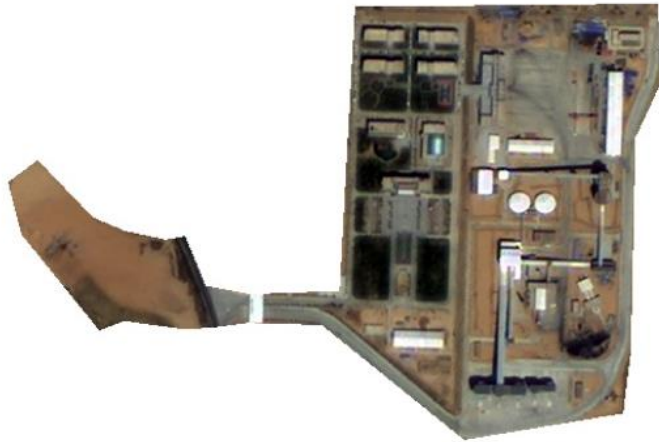
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4

Mobile field mapping verification system

Construction Projects

Rapid Extraction of Soil and Water Conservation Monitoring and Evaluation Indexes



GF-1 2m/8m Remote Sensing Image

Combination of remote sensing and ground monitoring

Real, objective and reliable data

Efficient, reducing the cost of field investigation



Extraction Result of Land Use Types

Accelerating the process of on-site
investigation and evidence collection



Rapid Extraction and Calculation of Water Erosion Quantitative Monitoring and Evaluation Indexes



- Automated interpretation
- Multi-feature fusion, multi-algorithm co-hierarchical extraction
- Accelerate the extraction of land use factor

Extraction of Land Use Types



- Remote sensing monitoring
- One-button automatic extraction
- Realization of big data engineering production

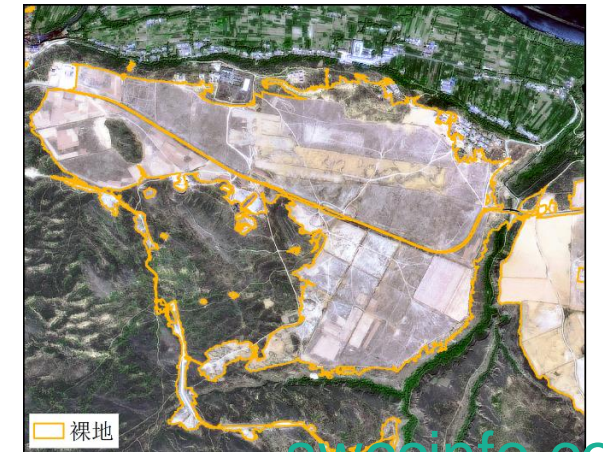
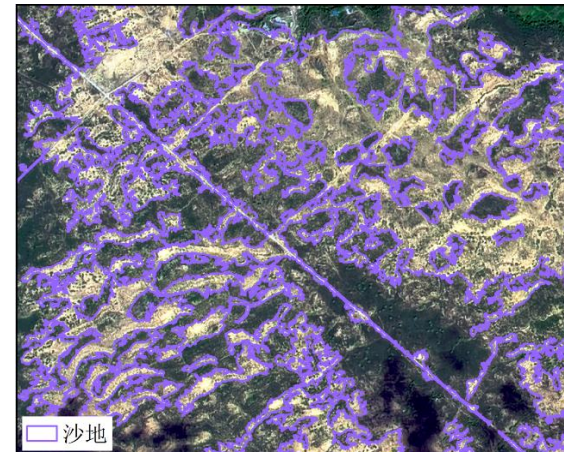
Extraction of Fractional Vegetation Coverage



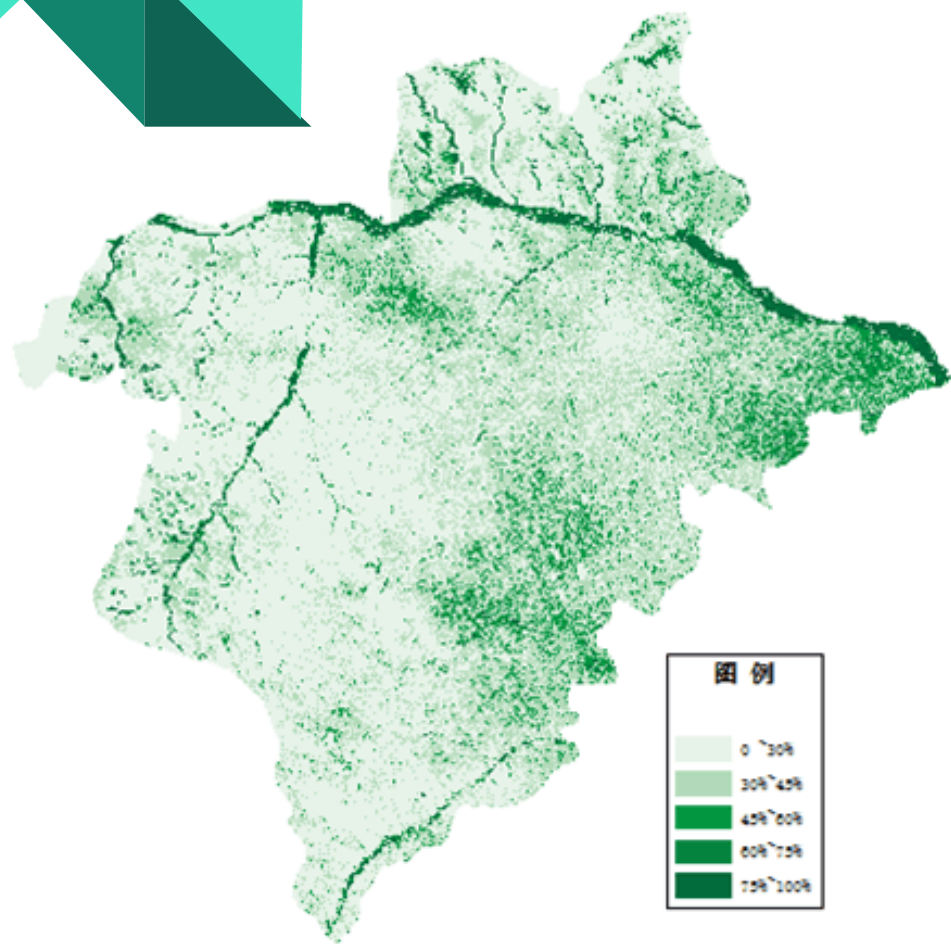
- Calculation modules of R, K, L, S, B, E, T were developed
- Support space automatic matching and spatial resolution self-adaptive of different factors
- Oriented towards soil and water conservation business

Calculation of Amount and Intensity of Water Erosion

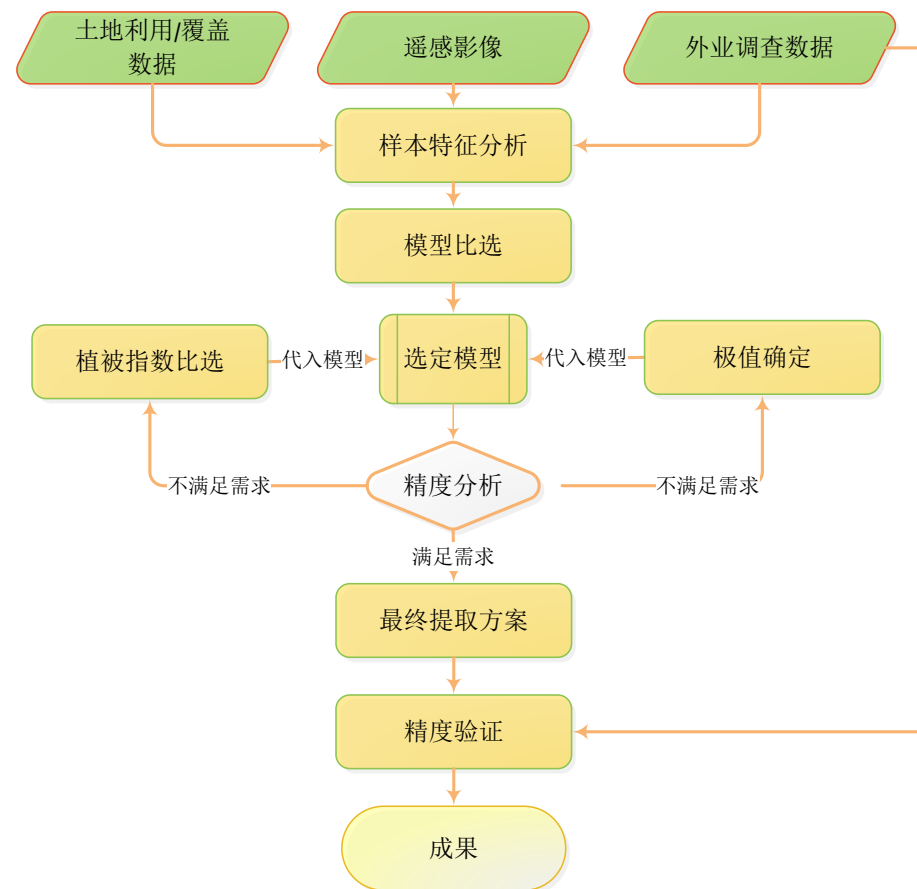
Extraction of Land Use Types



Extraction of Fractional Vegetation Coverage

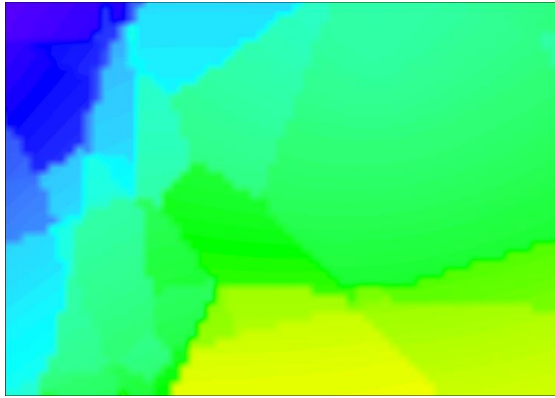


Classification of Extraction Result

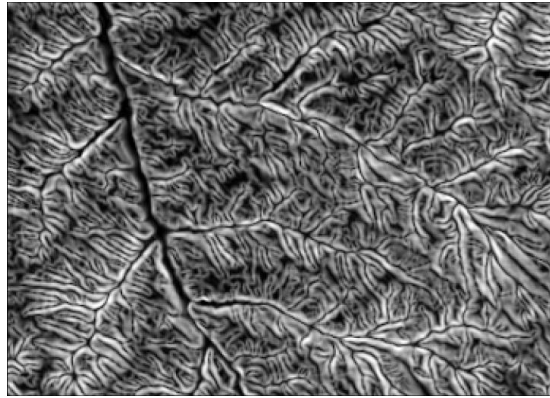


Technology Roadmap

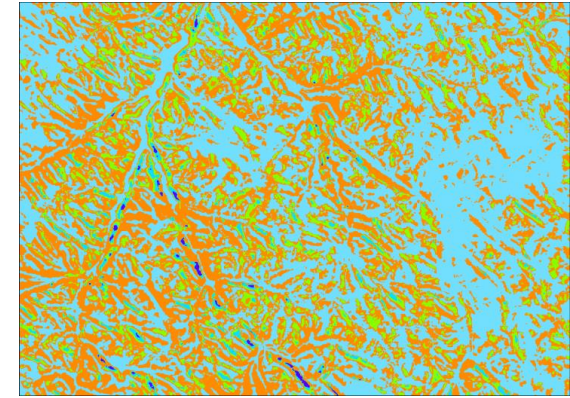
Calculation of Amount and Intensity of Water Erosion



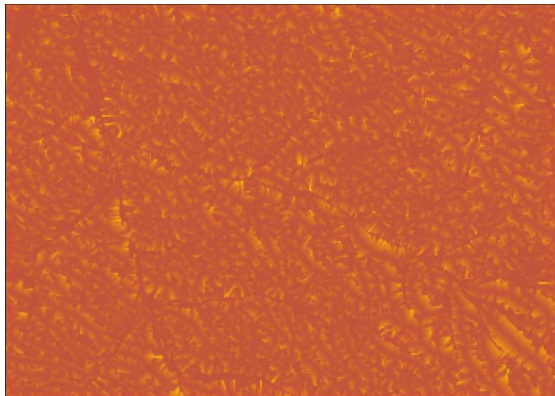
Rainfall Erosivity



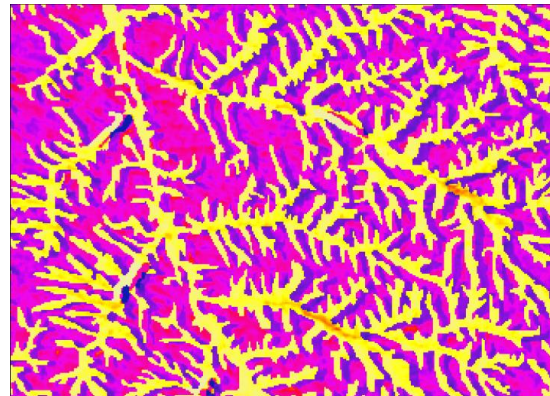
Slope



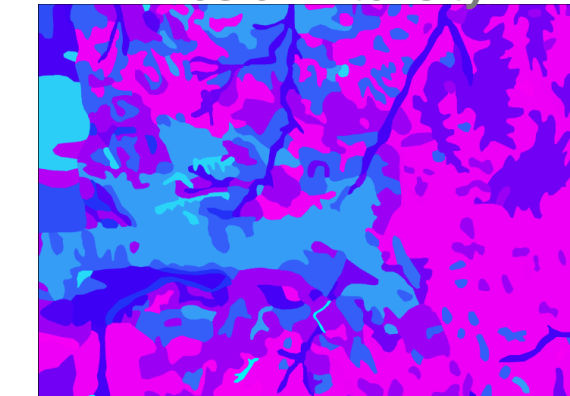
Spatial Distribution of Soil
Erosion Intensity



Slope Length



Biological Measures



Soil Erodibility



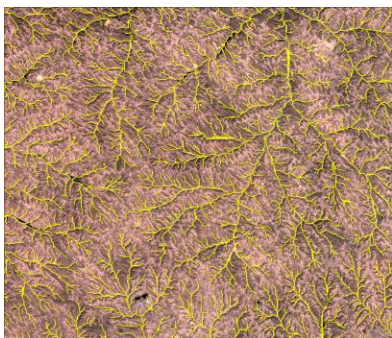
Rapid Extraction of Soil and Water Conservation Measures

Automatic Extraction of Check Dam for Farmland Forming

Automatic Extraction of Terrace

Extraction Model Based on Prior Knowledge

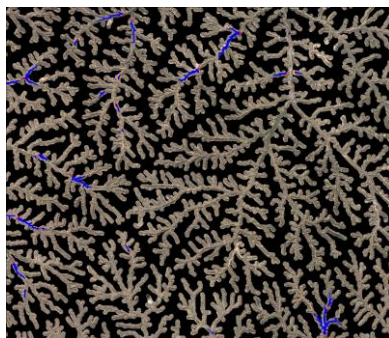
Three Algorithms



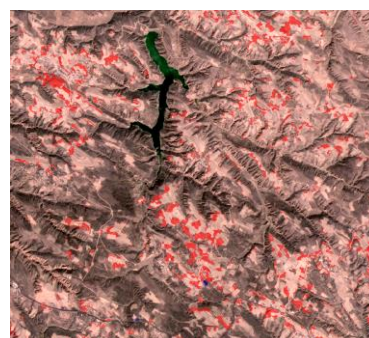
Gully



Gully Image



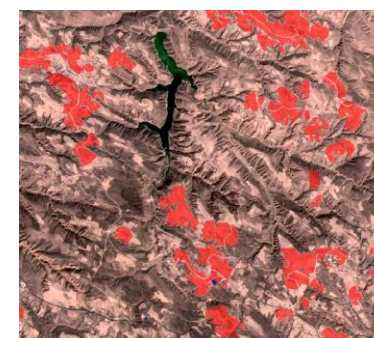
Extraction Result



Fourier Transformation



Template Matching

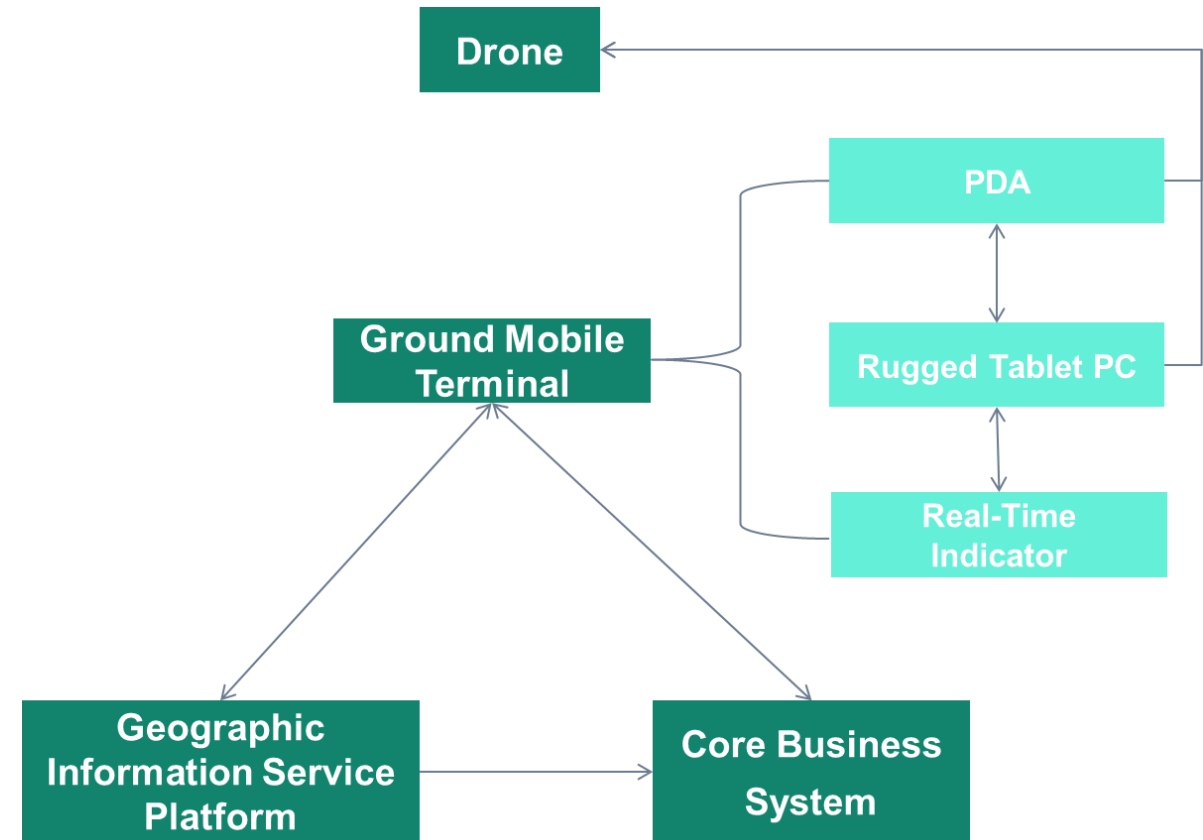


Edge Characteristics Statistics



Mobile Field Mapping Verification System

- Series of hardware and software, can be combined or used alone.
- Convenient for pre-data preparation, field work, post-data storage and so on.





Progress and Prospects

- ✓ Drone + Ground Mobile Terminal
- ✓ Internet + Soil and Water Conservation Content Services



Motor

Integrated

High
Temporal
Resolution

Drone

Efficient

High
Visual
Resolution

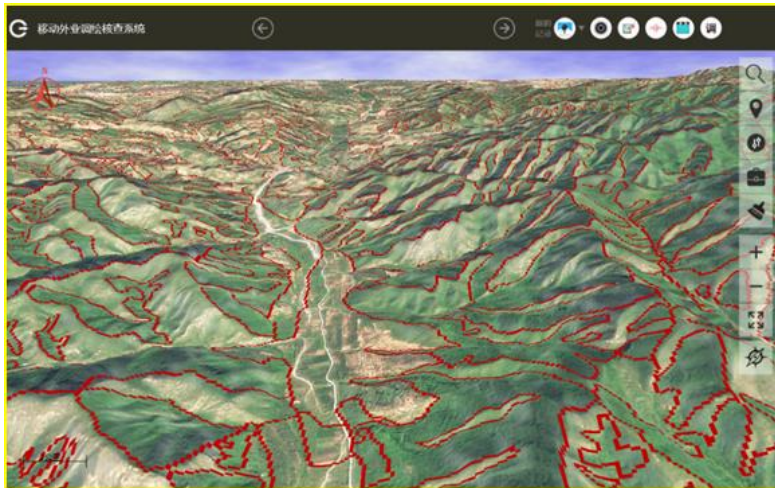
Portable



+



Drone + Ground Mobile Terminal



3D Scene

Information Query



Information Capture
Based on Location



Drone + Ground Mobile Terminal

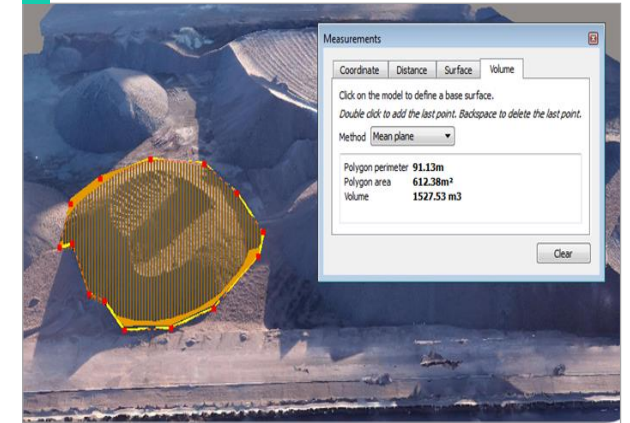
Ecological Restoration Measure



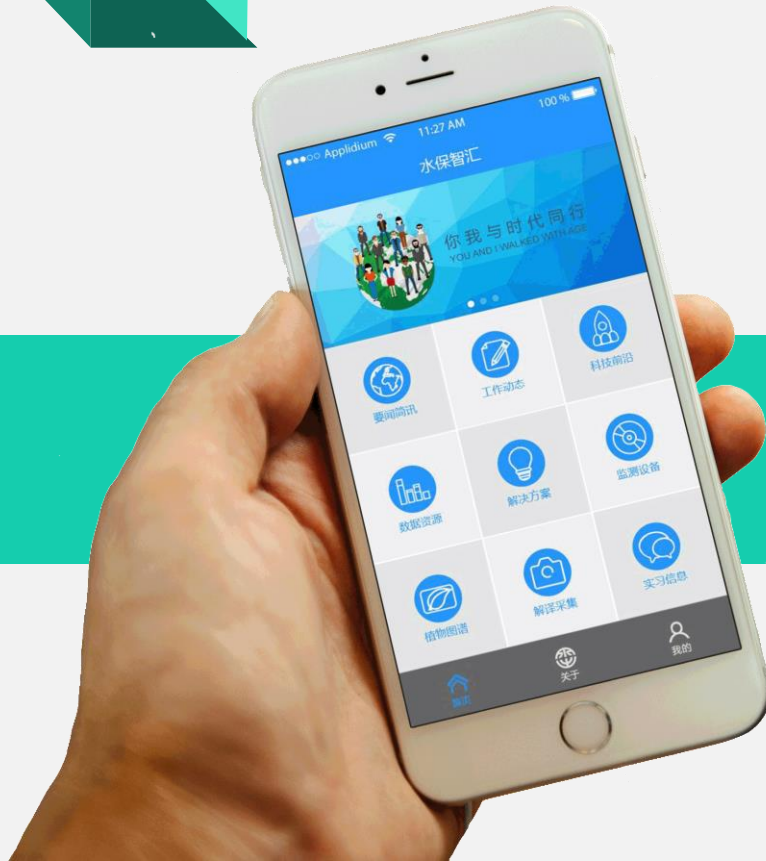
Soil Erosion Control



Calculation of Disturbed Area



Soil and Water Conservation Information Platform













Mobile terminal

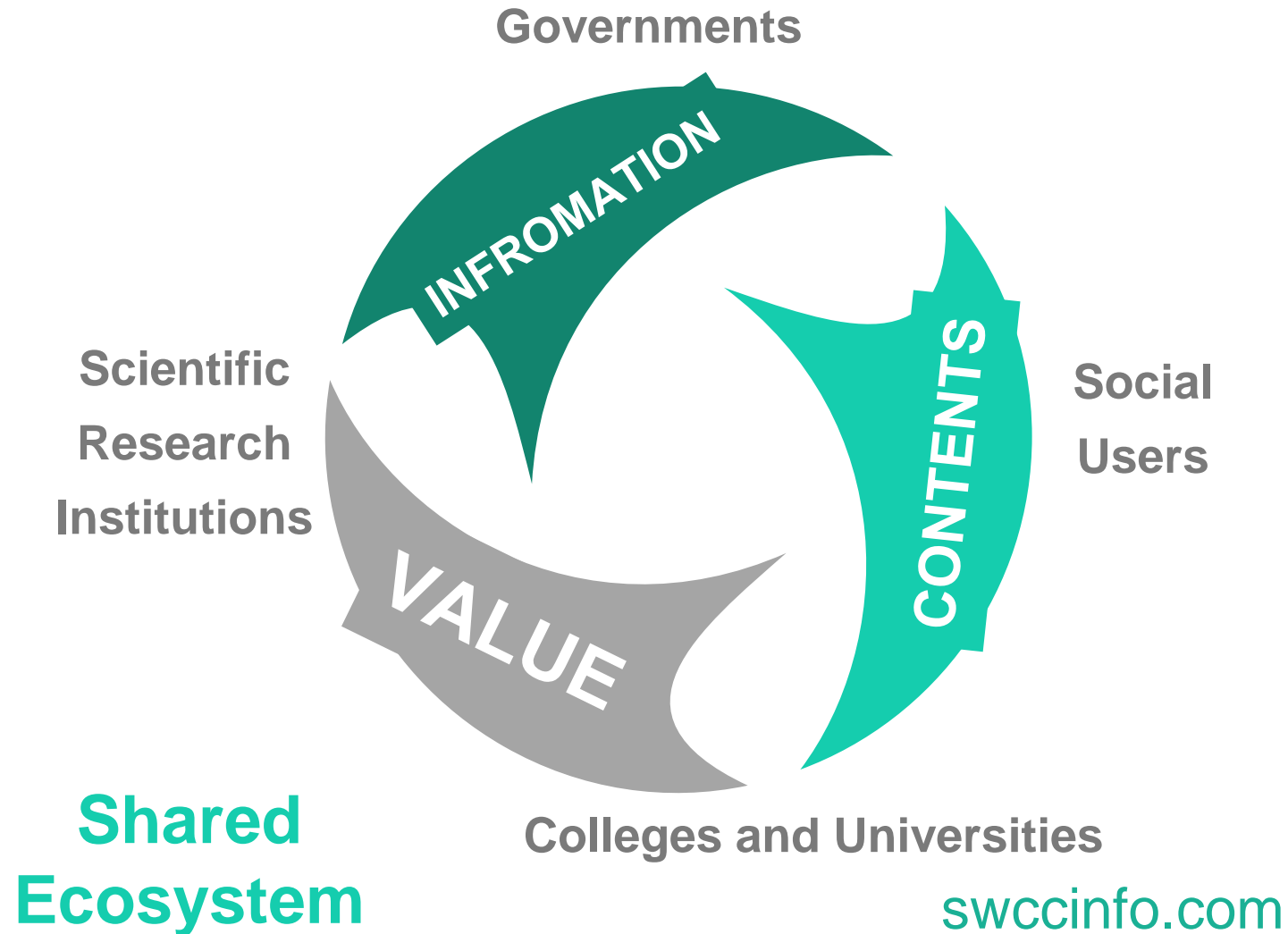


Web Client

Soil and Water Conservation Information Platform



 Bulletins	 Dynamics	 Frontiers
 Data	 Solutions	 Monitoring
 Tools	 Galleries	 Internships





THANK YOU!

PRESENTED BY DATUM

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