Small Satellite Constellation for Environment and Disaster Monitoring and Forecasting (SSCEDMF)

Satellite Disaster Reduction Application Center

Ministry of Civil Affairs，CHINA

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CONTENT

I. Introduction on the SSCEDMF

Objective

◆ **overall Objective**

Stage 1 : "2+1" stage

consisting of two optical satellites and one SAR satellite.

Stage 2 : "4+4" stage

consisting of four optical satellites and four SAR
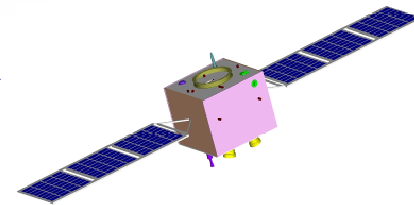
satellites in orbit.

HJ-1-A

HJ-1-B

HJ-1-C

◆ **Constellation Construction**

HJ-1-A and HJ-1-B were launched on Sep. 6th, 2008. HJ-1-C

will be launched in 2010, which will wrap up the construction
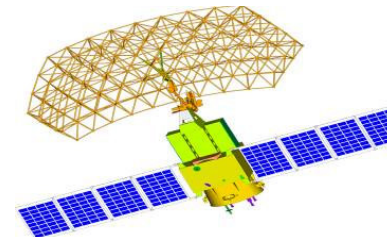
of Stage 1.

The following four optical satellites and four SAR

satellites will be continuously launched after 2013, and

the final objective will be achieved in due time.
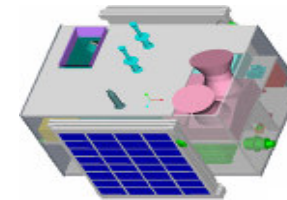
Satellite Parameters

| Satellite	Payload	Resolution（m）	Swath（km）	Band
HJ-1-A	CCD	30	700	4 bands
	HSI	100	50	115bands
HJ-1-B	CCD	30	700	4 bands
	IRS	B1、B2、B3：150 B4：300	720	4 bands
HJ-1-C	SAR	SCAN mode：15～25 Strip mode：4～6	95～105 35～40	S-band

Fields of Application

◆ **Disaster risk monitoring and assessment for flood, ice flush, drought, pets.**

◆ **Environment monitoring for lake bloom, red tide, atmosphere pollution.**

◆ **Land use data refreshing.**

◆ **Extraction for disaster background information.**

◆ **Monitoring for oil spilling over sea.**

◆ **Mineral identification and exploration.**

◆ **Monitoring for heat island in city.**

◆ **Investigation for land and resources.**

气象

灾害

林业

环境

海洋

农业

国土资源
矿产调查
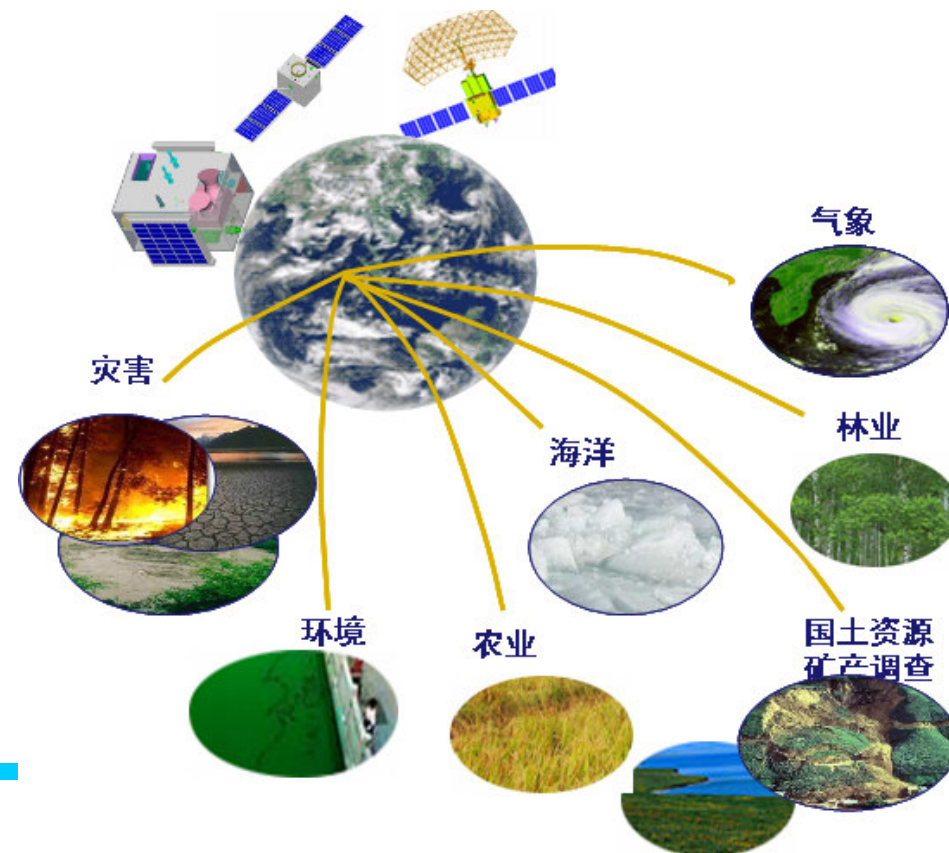
Operation Management

The satellites constellation is operated by SDRAC of MoCA.

◆ **Receiving and processing telemetry data, monitoring working conditions of the satellites and payloads.**

◆ **Programming the observing plan and data receiving plan.**

◆ **Satellites conventional and emergent operation management.**

◆ **Satellites control commands programming and transmitting.**
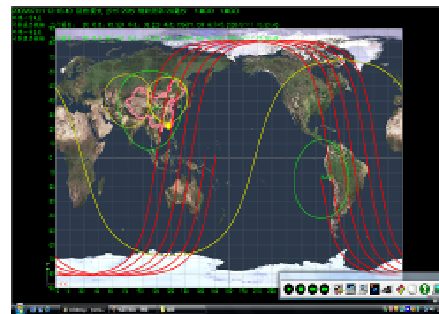
Application System

SDRAC is responsible for the construction and operation of the disaster reduction application system.
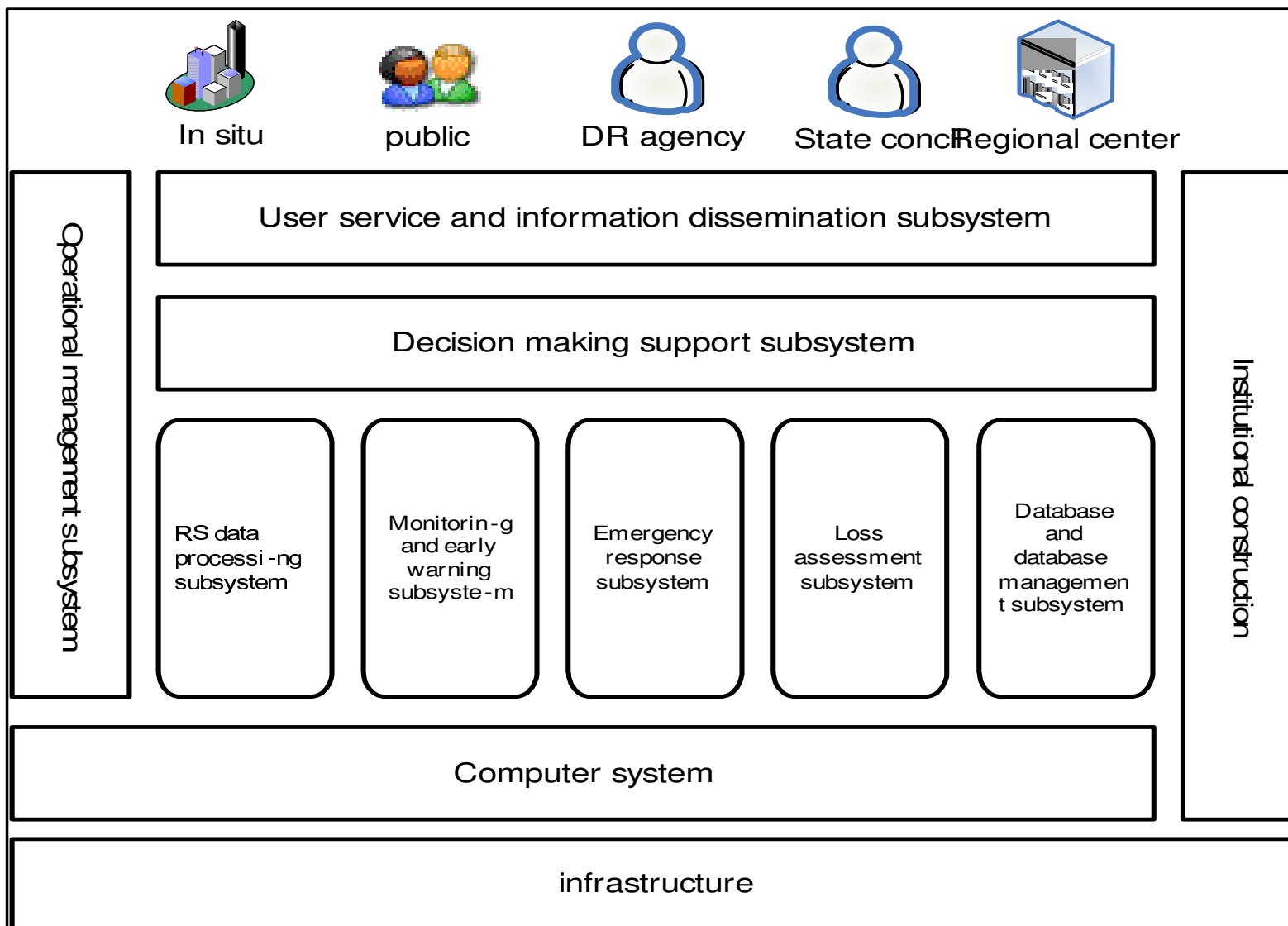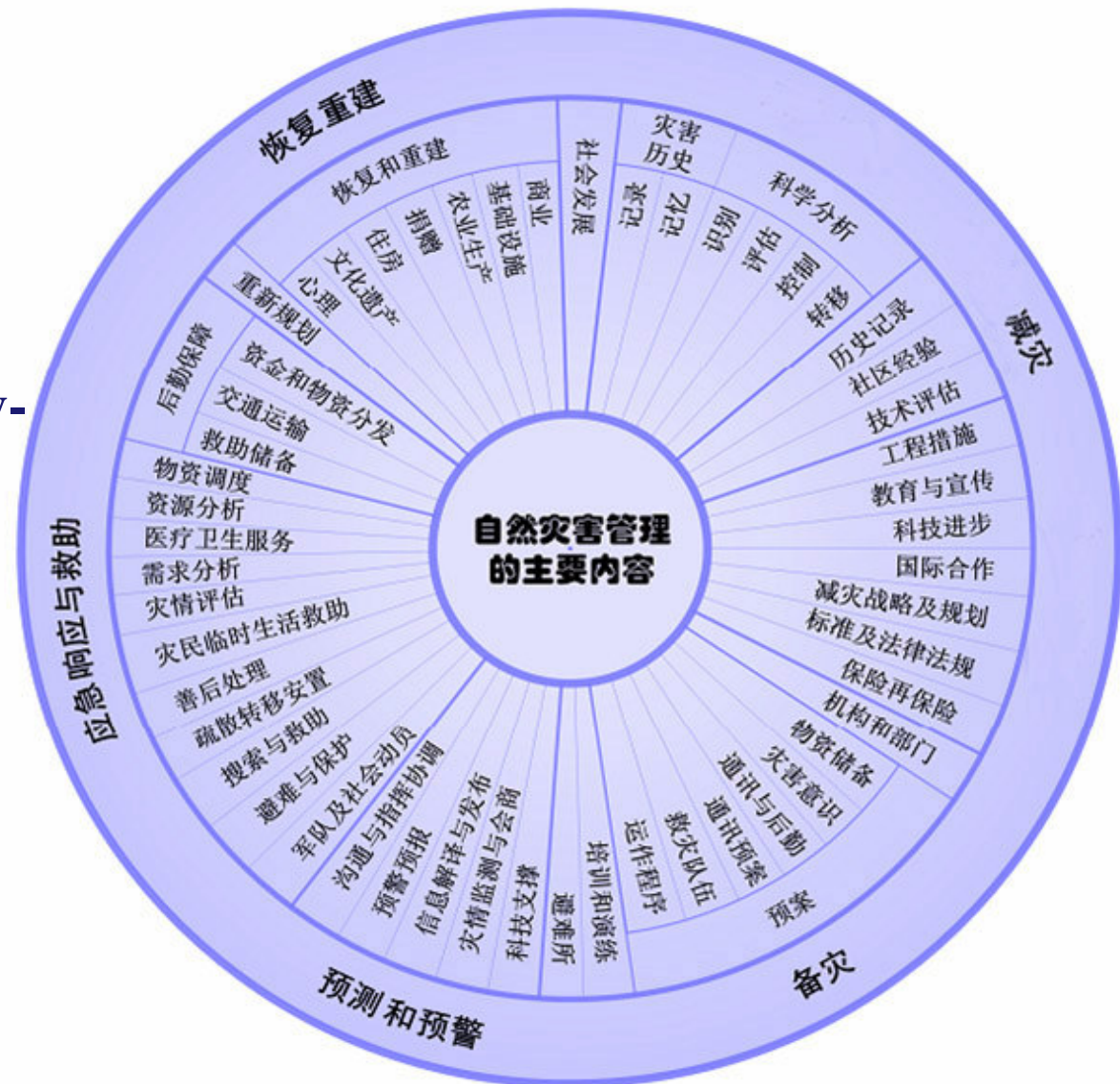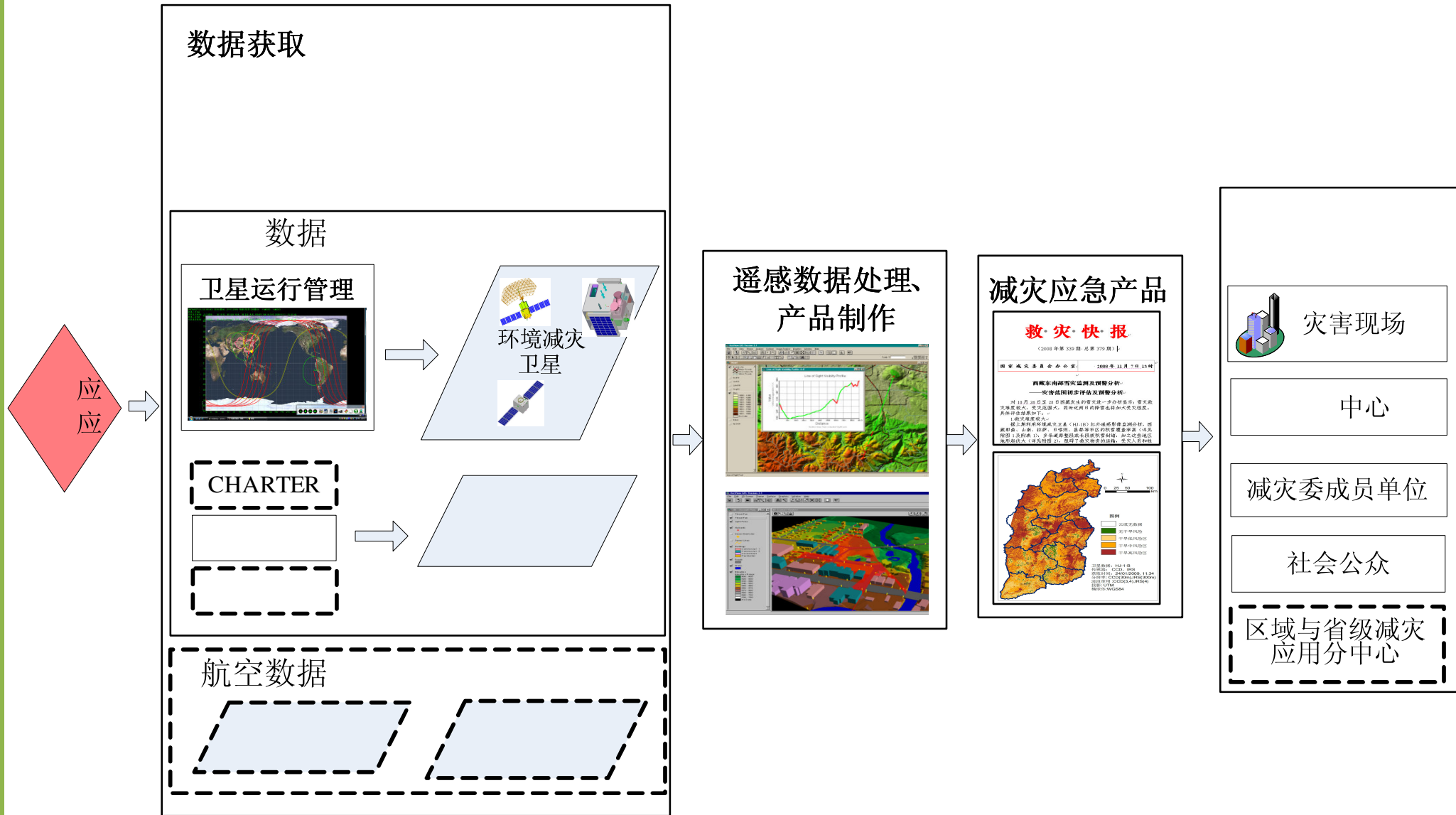
II. Application Capability of the SSCEDMF

Disaster Management

The constellation could be used throughout the whole process of disaster management.

◆ **disaster reduction**

◆ **disaster preparation**

◆ **disaster monitoring and early-warning**

◆ **emergency response and aid**

◆ **recovery and reconstruction**

Application Procedure

数据获取

数据

卫星运行管理

环境减灾
卫星

CHARTER

航空数据

遥感数据处理、
产品制作

减灾应急产品

救·灾·快·报

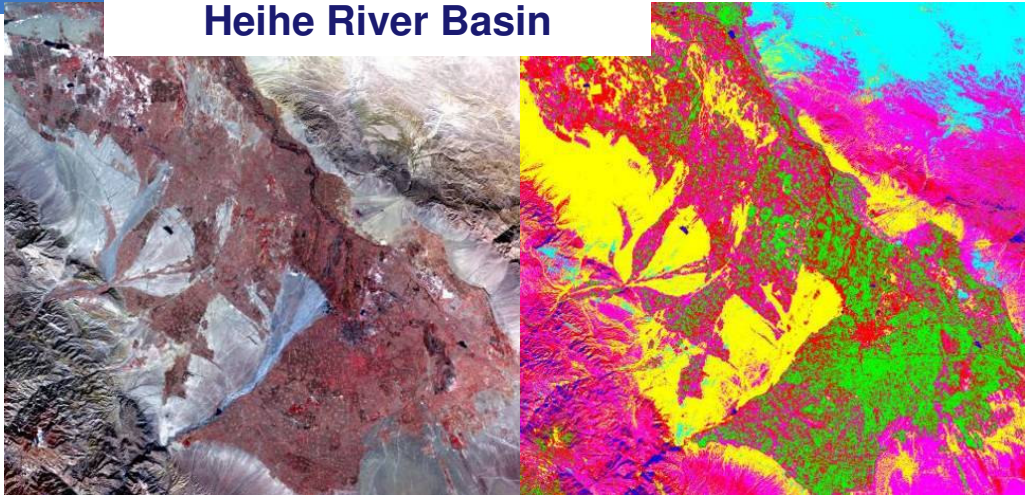灾害现场

中心

减灾委成员单位

社会公众

区域与省级减灾
应用分中心

应应

Product Service System

Since the satellites were launched, SSCEDMF has been widely used in the service application system of NCDR, and became indispensably supportive.
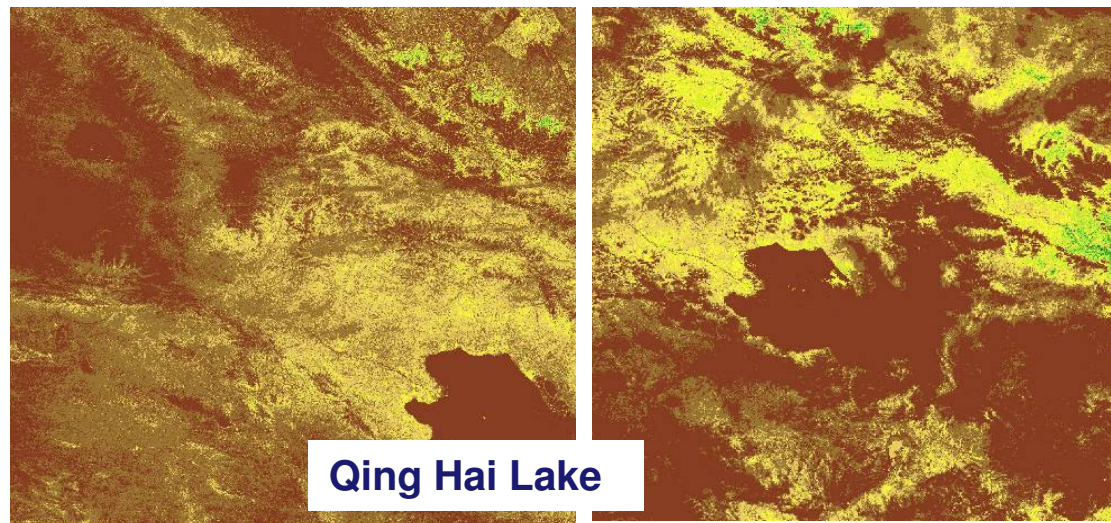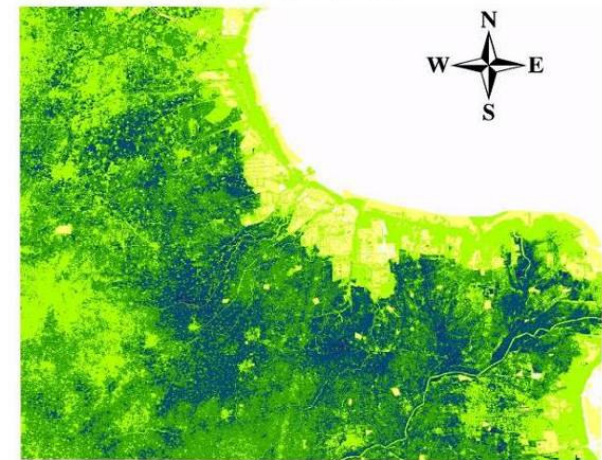
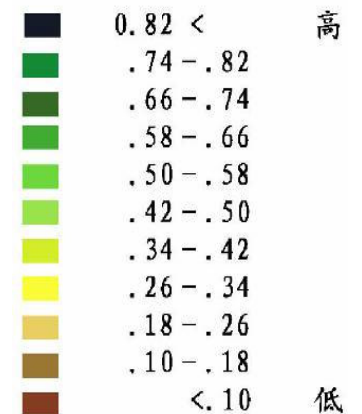# Disaster Background Information Extraction

Heihe River Basin

NDVI 分级图

	settlements		farmland		water
(red)		(green)		(blue)	

desert (yellow) bareland (cyan) mountain (magenta)

图例

0.10 – 0.10	0.53 – 0.58
0.10 – 0.30	0.58 – 0.70
0.30 – 0.53	0.70 – 1.00

0 35,000 70,000 米

植被指数

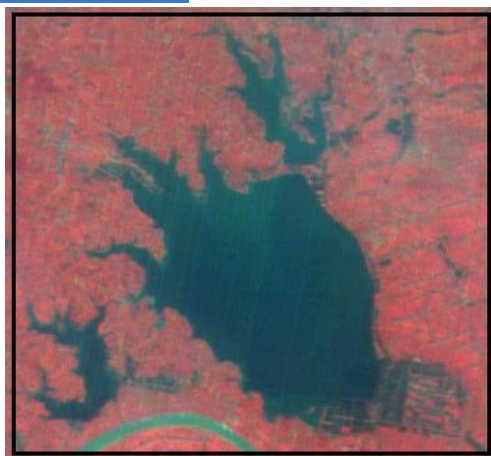| 0.82 < | 高 |
.74 – .82	
.66 – .74	
.58 – .66	
.50 – .58	
.42 – .50	
.34 – .42	
.26 – .34	
.18 – .26	
.10 – .18	
<.10	低

Qing Hai Lake

Disaster Background Information Extraction

**HJ1B CCD2 Dong Ting Lake
Sep. 17, 2008**

Abstract picture
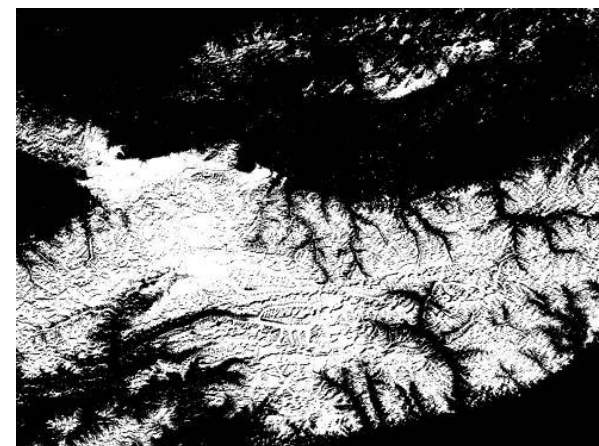
旱 情 分 布 图

0	35,000	70,000
米

图例
背景   轻旱
湿润   中旱
正常   重旱
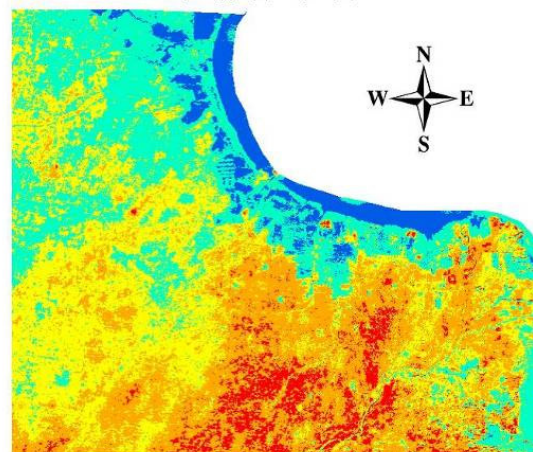
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ERROR: stackunderflow
OFFENDING COMMAND: ~

STACK:
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