

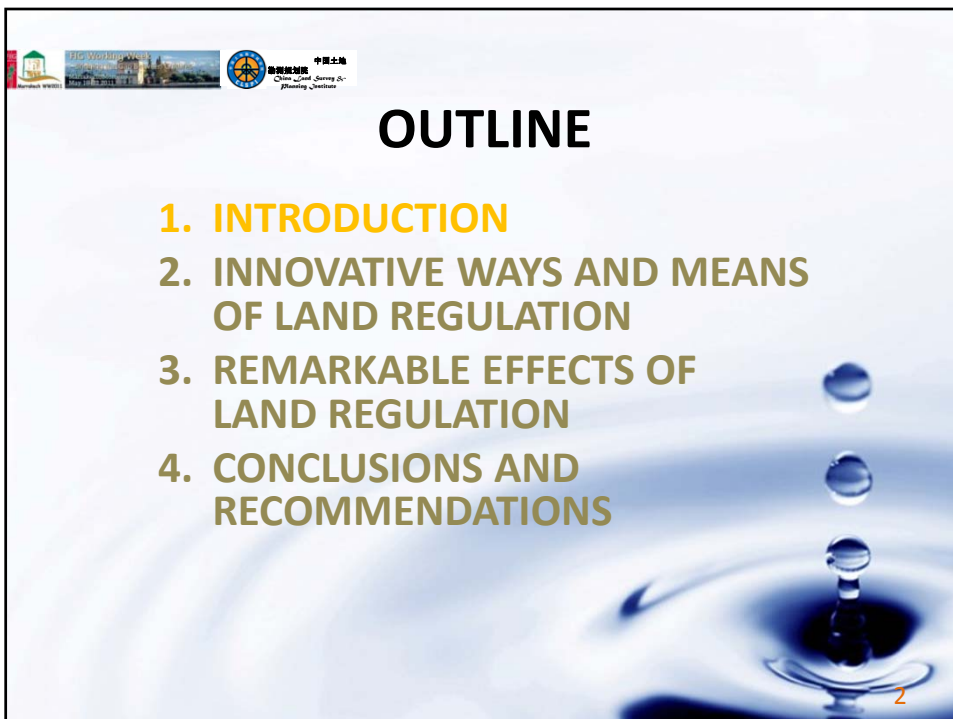



 

Remote Sensing Supplying Technical Support for Innovation of Land Management

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2011/05/19, Morocco

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OUTLINE

1. INTRODUCTION
2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION
3. REMARKABLE EFFECTS OF LAND REGULATION
4. CONCLUSIONS AND RECOMMENDATIONS

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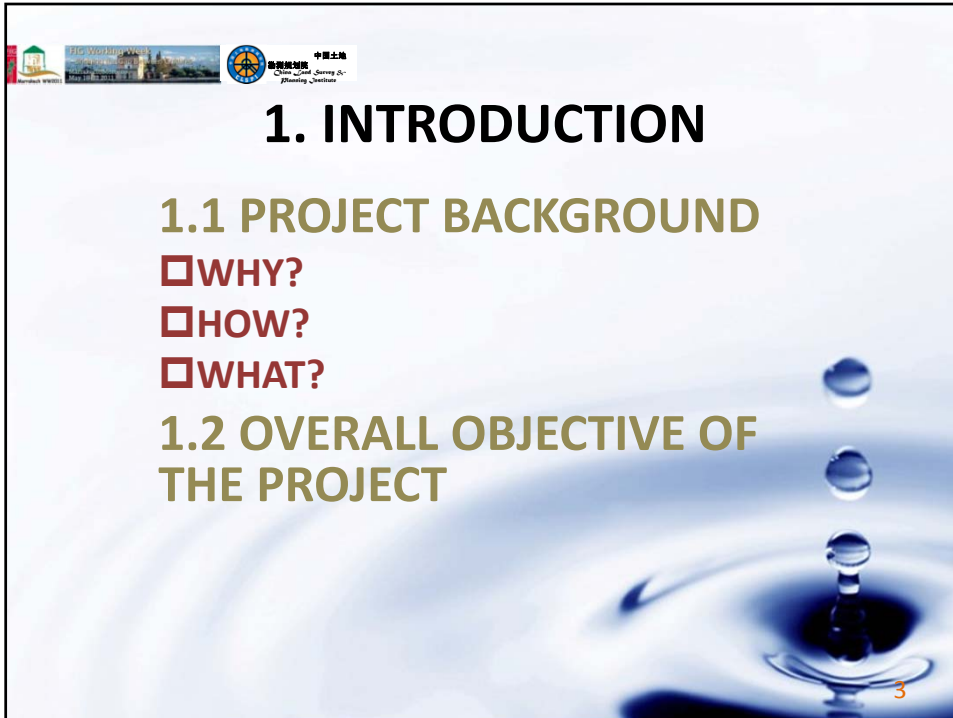


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May 18-22, 2011

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

- WHY?
- HOW?
- WHAT?

1.2 OVERALL OBJECTIVE OF THE PROJECT

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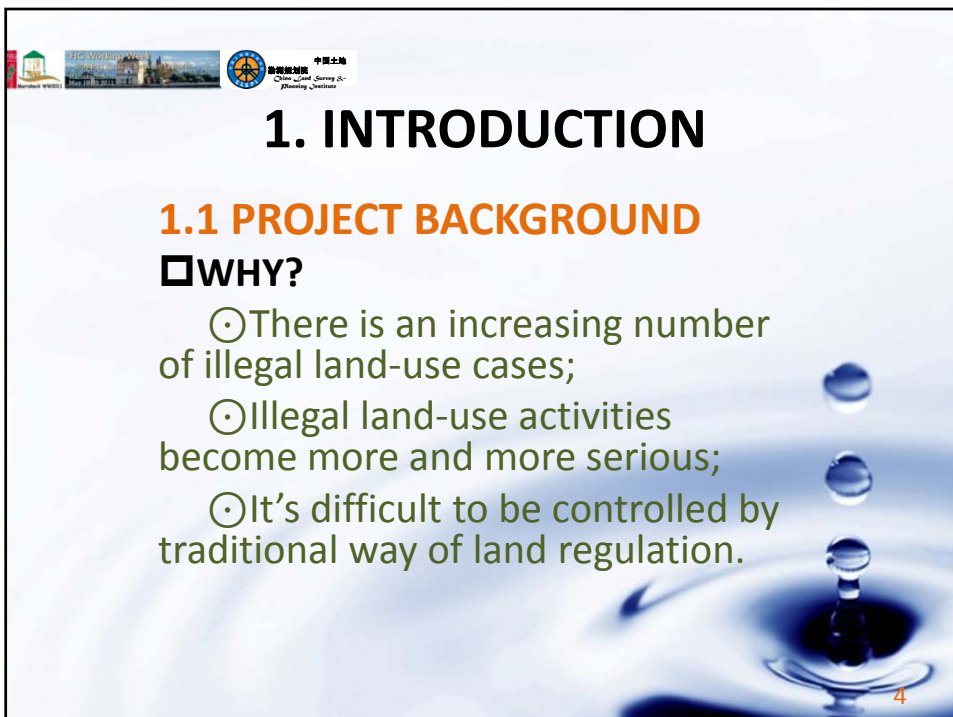


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1. INTRODUCTION

1.1 PROJECT BACKGROUND

- WHY?
 - ⊙ There is an increasing number of illegal land-use cases;
 - ⊙ Illegal land-use activities become more and more serious;
 - ⊙ It's difficult to be controlled by traditional way of land regulation.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

□HOW?

It becomes inevitable to make full use of **satellite remote sensing technique** to conduct law enforcement and inspection of satellite Land Images.

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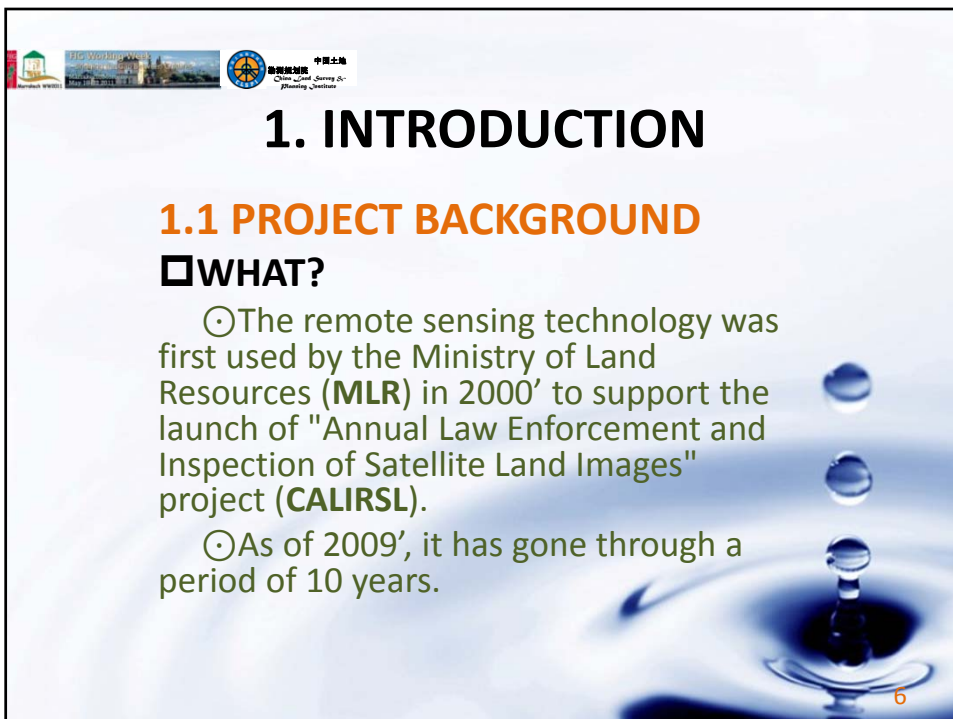


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1. INTRODUCTION

1.1 PROJECT BACKGROUND

□WHAT?

⊙The remote sensing technology was first used by the Ministry of Land Resources (**MLR**) in 2000' to support the launch of "Annual Law Enforcement and Inspection of Satellite Land Images" project (**CALIRSL**).

⊙As of 2009', it has gone through a period of 10 years.

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1. INTRODUCTION

1.2 OVERALL OBJECTIVE OF THE PROJECT

- To gradually realize "land supervision by images"
- To give full play to the importance of satellite remote sensing technology in monitoring the land by quick discovery and timely investigation.
- To aim to effectively control illegal land activities.

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2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

- WHAT IS LAW ENFORCEMENT OF SATELLITE IMAGES?
- INNOVATIVE WAYS OF LAND REGULATION
- INNOVATIVE MEANS OF LAND REGULATION

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2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

- WHAT IS LAW ENFORCEMENT OF SATELLITE IMAGES?

Law Enforcement of Satellite Images is to detect and deal with illegal land-use cases, illegal exploitation and exploration of mineral resources by using satellite remote sensing technology based on the annual remote monitoring results.

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2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

□ INNOVATIVE WAYS OF LAND REGULATION

(1) Comparison between traditional and innovative ways

- **Traditional way of law enforcement:**
 - Relying only on reports from local people
 - Through media (newspapers, television) exposure
 - Personal supervision by running errands

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2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

- **Law enforcement of satellite images:**
 - Making full use of all modern high-tech means (**satellite remote sensing, computer information and network technology**)
 - Giving full play to the advantages of satellite remote sensing (**strong imaging display, rapid detection, and precise positioning**)
 - Promptly detecting and deal with illegal land-use cases

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2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

□ INNOVATIVE WAYS OF LAND REGULATION

(2) Comparison between advantages and disadvantages

(see : Table 1 Comparison between advantages and disadvantages)

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Table 1 Comparison between advantages and disadvantages

	Traditional way of law enforcement	Law enforcement of satellite images
1.Working mode	Traditional mode	High-tech mode
2.Coverage of regulation	Local	Nationwide
3.Regulatory approach	Manual work	Satellite images
4.Detection of illegal cases	Untimely	Promptly and accurately
5.Treatment of illegal cases	Passively	Actively
6.Land management	Traditional management	Promoting innovation

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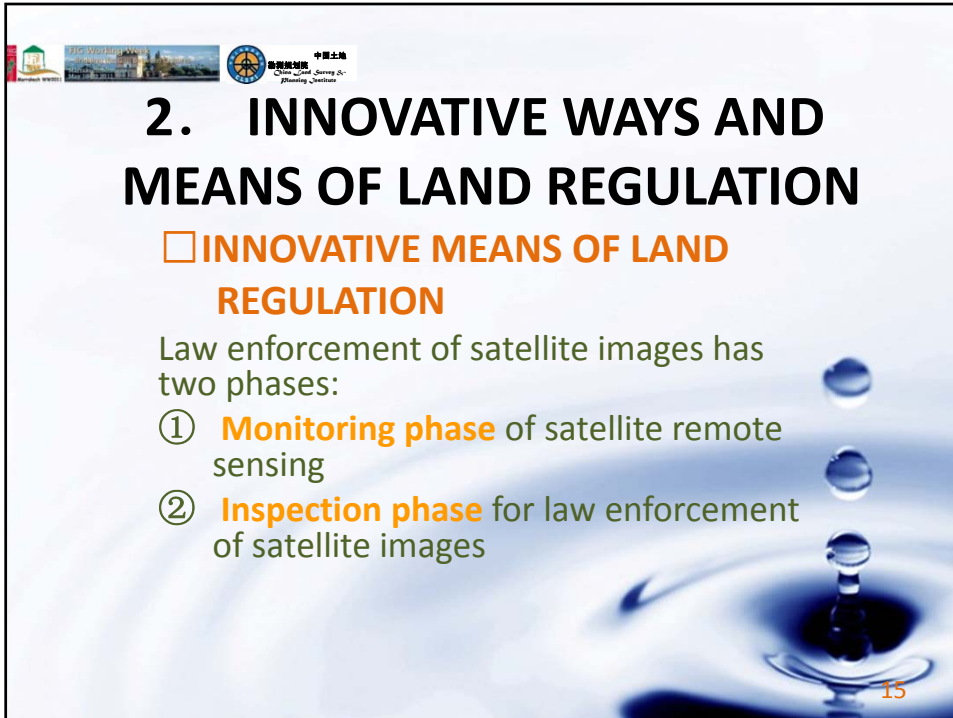


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2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

□ **INNOVATIVE MEANS OF LAND REGULATION**

Law enforcement of satellite images has two phases:

- ① **Monitoring phase** of satellite remote sensing
- ② **Inspection phase** for law enforcement of satellite images

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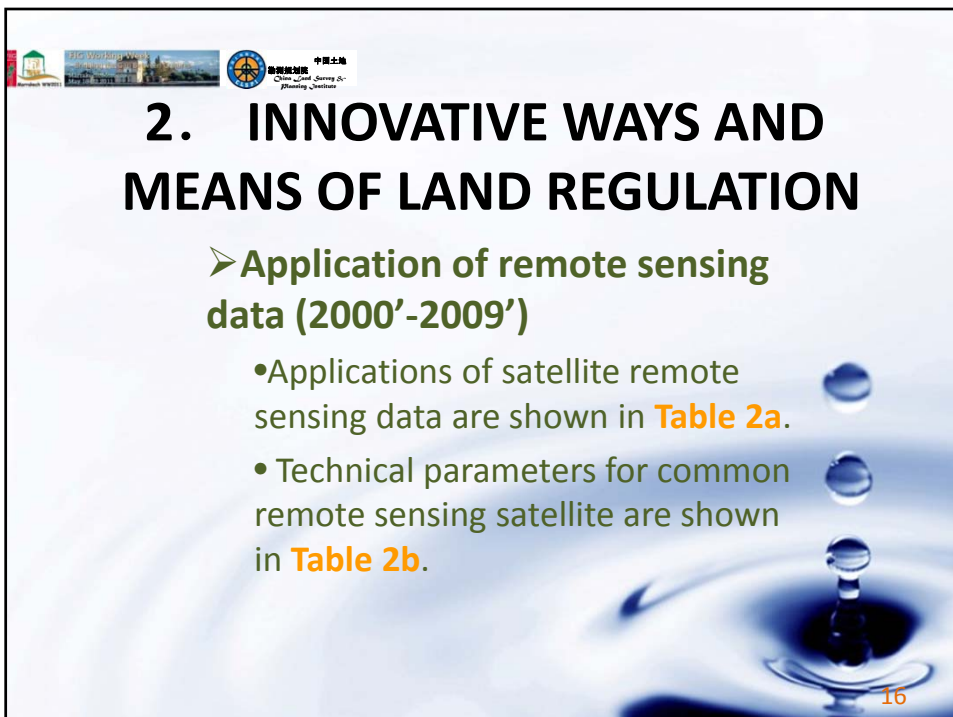


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2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

➤ **Application of remote sensing data (2000'-2009')**

- Applications of satellite remote sensing data are shown in **Table 2a**.
- Technical parameters for common remote sensing satellite are shown in **Table 2b**.


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Table 2a Application of remote sensing data in the project (2000'-2009')

Year	SPOT 5	ALOS	IRS-P5	ROCSAT-2	ZY-2	BJ-1	IRS-P6	SPOT 2/4	CEBERS-02/02b	TM/ETM	SAR	DMC	Air photo	Ikonos	QB	Orb view	World View	Geo Eye	EROB	Rapid Eye
2000								✓		✓										
2001								✓		✓	✓									
2002	✓				✓			✓		✓										
2003	✓				✓					✓										
2004	✓				✓					✓				✓	✓	✓				
2005	✓						✓	✓		✓				✓	✓					
2006	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓					
2007	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
2008	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
2009	✓	✓	✓		✓	✓	✓	✓	✓	✓				✓	✓			✓	✓	✓
TOTAL	8	4	4		7	4	5	8	4	10				6	6					

Table 2b Technical parameters for common remote sensing satellite

Classification	System	Spatial Resolution (Pan/Ms, (m))	Bands (Pan/Ms)	Swath(km)	Repeat time(day)	Launch time(yy/mm/dd)
High resolution	QuickBird	0.61/2.44	1/4	544	1-6	2011/10/19
	WorldViewII	0.5/1.8	1/8	16.4	1.1-3.7	2009/10/06
	IKONOS	1/4	1/4	11	3	1999/07/24
	GeoEye	0.41/1.65	1/4	15.2	2.8	2008/09/06
	EROB	0.7/	1/	7	5	2006/04/25
Mid-high Resolution	SPOT 5/4	2.5,5/10,20	2/4	60	1-4;4-6	2002/05/04
	ALOS	2.5/10	1/4	70	2	2006/01/24
	IRS-P5/P6 (Lissat)	2.5/; 5.8/23.5	1/3/4	25;/70/141	5;/5/24	2005/05/05; 2003/10/17
	RapidEye	/5	/5	77	1	2008/08/29
Mid-low Resolution	Landsat TM/ETM	/30; 15/30	/7; 1/7	183	16	
	ZY-2	3/	1/	30	4	2000/09/01
	CBERS-02 /02B	/19.5; 2.36/20	/5; 1/5	/113; 27/113	/26; 104/25	2003/10/21; 2007/09/19
	BJ-1	4/32	1/3	24.2/600	3-5	2005/10/27
	HJ-A/B	/30	/4	360(15; 700(d)	4	2006/01/06

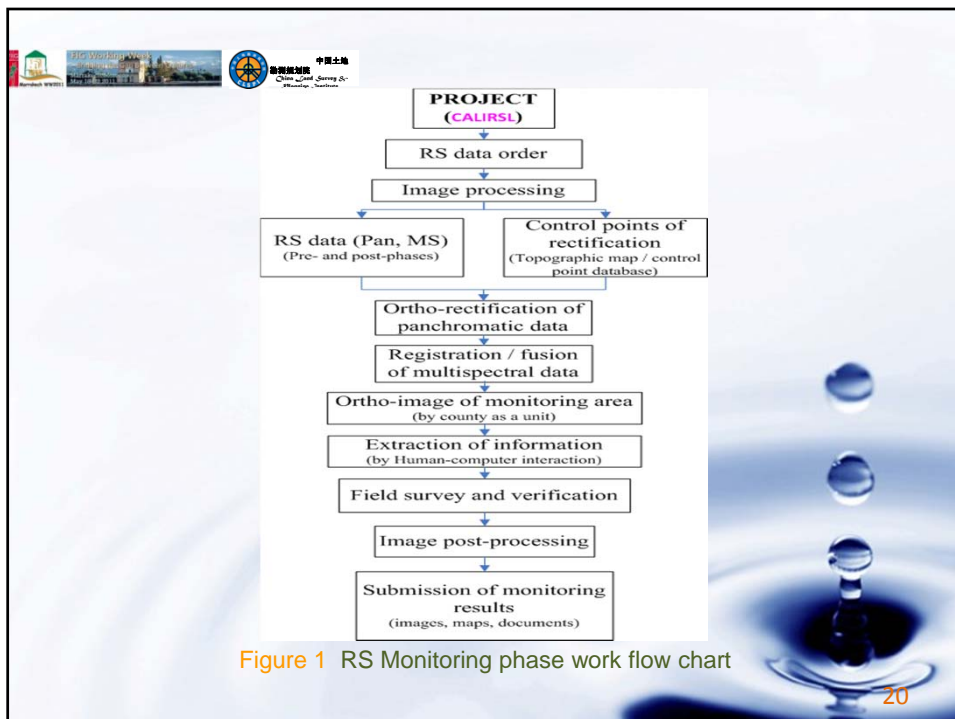


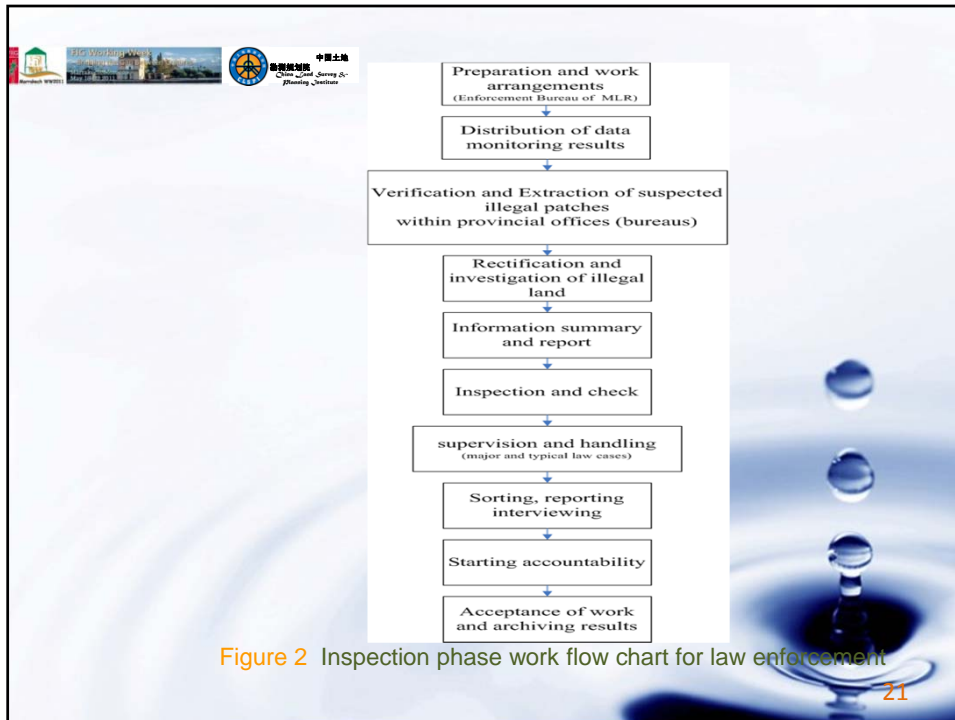
2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION

➤ **Work flow chart**

- RS Monitoring phase flow chart. (see Figure 1).
- Inspection phase flow chart for law enforcement of satellite images. (see Figure 2).

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OUTLINE

1. INTRODUCTION
2. INNOVATIVE WAYS AND MEANS OF LAND REGULATION
3. REMARKABLE EFFECTS OF LAND REGULATION
4. CONCLUSIONS AND RECOMMENDATIONS

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3. REMARKABLE EFFECTS OF LAND REGULATION

- **INCREASED REGULATION COVERAGE AND EXPANDED DETERRENT CAPACITY**
- GRADUAL IMPROVEMENT OF THE MANAGEMENT ORDER IN LAND MARKET
- CONTINUOUS IMPROVEMENT OF LAWS AND REGULATIONS
- CONTINUOUS IMPROVEMENT OF LAW ENFORCEMENT INSPECTION WORK
- PROMOTING AND WELL APPLYING THE MINISTRY OF LAND RESOURCES' INTEGRATED MONITORING PLATFORM

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3. REMARKABLE EFFECTS OF LAND REGULATION

- **INCREASED REGULATION COVERAGE AND EXPANDED DETERRENT CAPACITY**
- A Table
- A series of chart

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Planning Questions

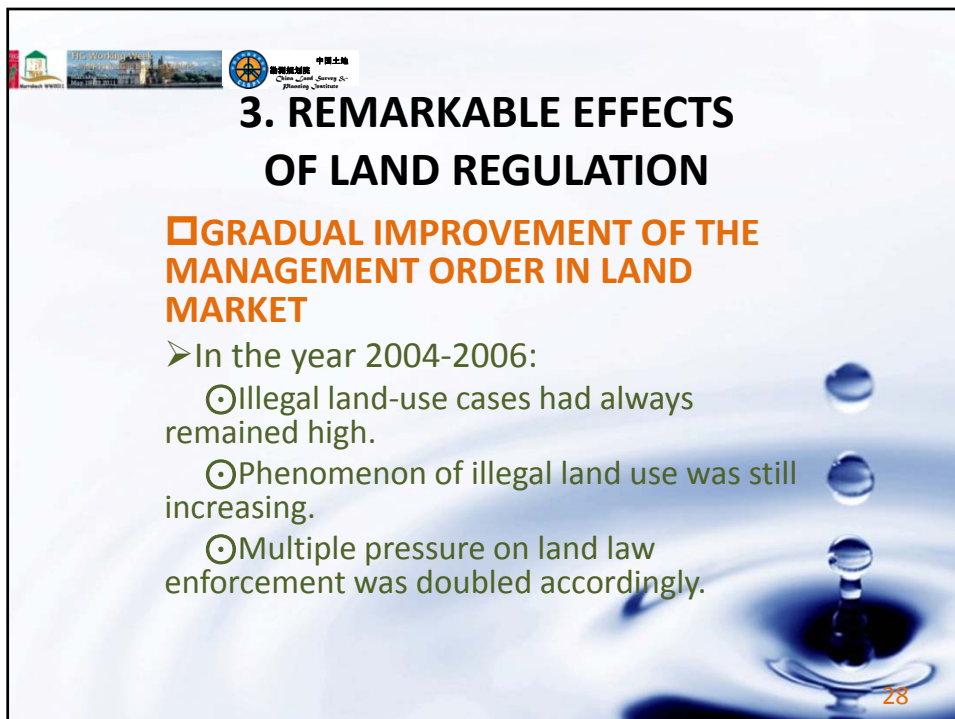
3. REMARKABLE EFFECTS OF LAND REGULATION




**□ GRADUAL IMPROVEMENT OF THE
MANAGEMENT ORDER IN LAND
MARKET**

General characteristics and trends:

- continuously declining nationwide
- gradually improving

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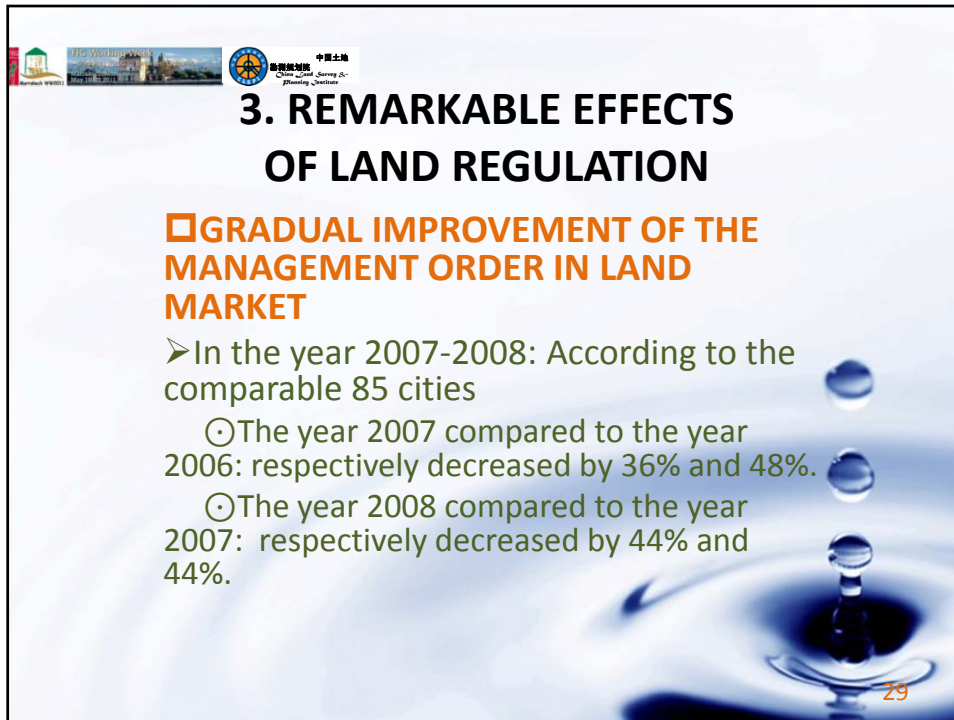
3. REMARKABLE EFFECTS OF LAND REGULATION



**□ GRADUAL IMPROVEMENT OF THE
MANAGEMENT ORDER IN LAND
MARKET**

➤ In the year 2004-2006:

- Illegal land-use cases had always remained high.
- Phenomenon of illegal land use was still increasing.
- Multiple pressure on land law enforcement was doubled accordingly.

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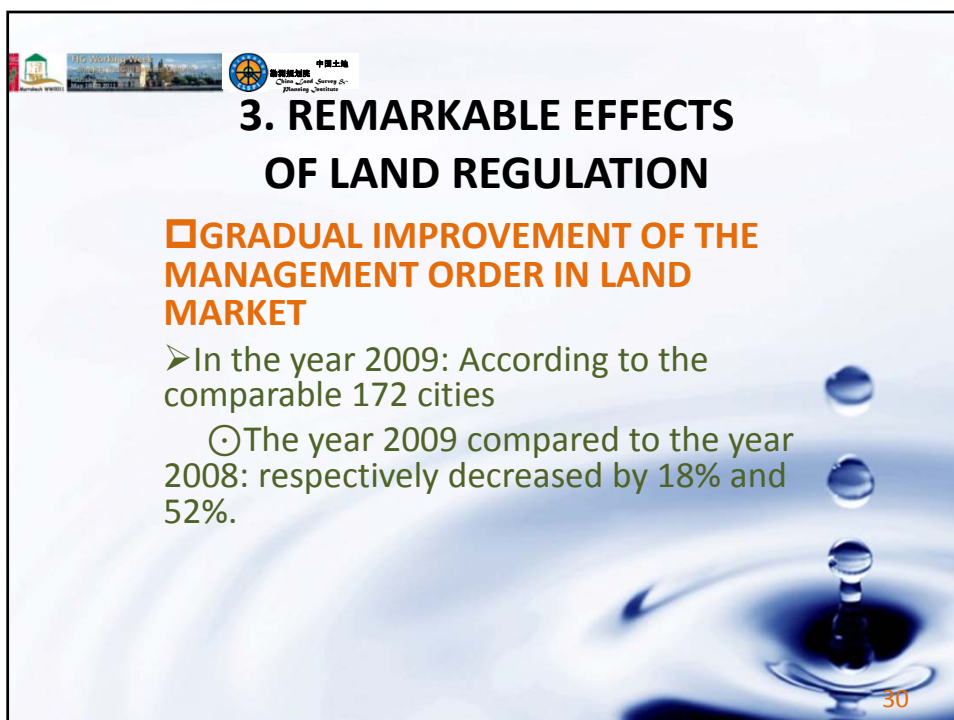





3. REMARKABLE EFFECTS OF LAND REGULATION

□ GRADUAL IMPROVEMENT OF THE MANAGEMENT ORDER IN LAND MARKET

- In the year 2007-2008: According to the comparable 85 cities
 - ⊙ The year 2007 compared to the year 2006: respectively decreased by 36% and 48%.
 - ⊙ The year 2008 compared to the year 2007: respectively decreased by 44% and 44%.

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3. REMARKABLE EFFECTS OF LAND REGULATION

□ GRADUAL IMPROVEMENT OF THE MANAGEMENT ORDER IN LAND MARKET

- In the year 2009: According to the comparable 172 cities
 - ⊙ The year 2009 compared to the year 2008: respectively decreased by 18% and 52%.

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3. REMARKABLE EFFECTS OF LAND REGULATION

CONTINUOUS IMPROVEMENT OF LAWS AND REGULATIONS

A total of 86 policy documents related to law enforcement work on land and resources have been introduced.

- ⊙ There were 11 documents on laws and administrative regulations
- ⊙ 6 on judicial interpretation
- ⊙ A total of 69 issued papers, approaches and notifications

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3. REMARKABLE EFFECTS OF LAND REGULATION

CONTINUOUS IMPROVEMENT OF LAW ENFORCEMENT INSPECTION WORK

- ⊙ In 2006, it implemented from self-verification to a cross-check by each other
- ⊙ In 2007, warning interviews were proposed against local government authorities in regions with serious illegal land use.
- ⊙ In 2008, it was proposed to carry out measures such as visiting notification, group interviews, and reduced Land using indicators.
- ⊙ since 2009, the "Accountability of Satellite Images" system was fully started.

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3. REMARKABLE EFFECTS OF LAND REGULATION

**□ CONTINUOUS IMPROVEMENT OF
LAW ENFORCEMENT INSPECTION
WORK**

What is the "Accountability of Satellite
Images" ?

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3. REMARKABLE EFFECTS OF LAND REGULATION

**□ PROMOTING AND WELL APPLYING
THE MINISTRY OF LAND RESOURCES
INTEGRATED MONITORING PLATFORM**

- Using integrated monitoring platform □
- Detecting patches of suspected illegal land use among new construction sites
- Efficiently improving work efficiency
- Greatly promoting the improvement of land management and early realizing the overall objective of "land supervision by images"



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OUTLINE

1. INTRODUCTION
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4. CONCLUSIONS AND RECOMMENDATIONS

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4. CONCLUSIONS AND RECOMMENDATIONS

□ **To sum up:**

law enforcement of satellite images gradually reached a **nationwide coverage** in ten years with **more innovative** techniques and **improved** working specifications.

It has changed the traditional way of law enforcement, and gradually formed a **tridimensional supervision system** of "seeing from the sky, detecting from the earth, and managing on the Internet" for land and resources.

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4. CONCLUSIONS AND RECOMMENDATIONS

□ **Here are relative opinions**

- **First, land regulation is still tough.**
 - The situation of illegal land the country is still not optimistic.
 - Some tendentious problems of illegal land use are concentrated, and especially serious in some local regions.
 - In particular, illegal land use of some development zones continues to rise, and it has not been effectively curbed.

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4. CONCLUSIONS AND RECOMMENDATIONS

- **Second, we should continuously give play to the advantages of law enforcement of satellite images, and improve our capabilities for precise and rapid detection.**
 - Law enforcement of satellite images has become a very important and irreplaceable means for supervision and regulation of land and resources management.
 - Exerting strengths and characteristics - accuracy, speedy, wide-ranged.

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4. CONCLUSIONS AND RECOMMENDATIONS

- **Third, the land-regulatory approach should be promoted to a new level.**
 - The law enforcement of satellite images has played an important role in providing technical support to solve the "difficulty in detection".
 - Promoting the early realization of "land supervision by images", establishing and perfecting the tridimensional law enforcement & supervision system of "seeing from the sky, detecting from the earth, and managing on the Internet".

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Thanks!

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