

FOREST INVENTORY AND PLANNING INSTITUTE (FIPI)



REMOTE SENSING TOOLS USED IN VIETNAM'S NATIONAL FOREST MONITORING SYSTEM

Ngo Van Tu

Hanoi, 20-22 Oct 2014

5th UN-REDD Regional Lessons Learned Workshop
Forest Monitoring Systems and Reference Levels for REDD+

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1. INTRODUCTION



331,698 km²

Mountain: 75%

Forest cover: 41%

1. INTRODUCTION

Applied since 1990 for mapping national forest cover

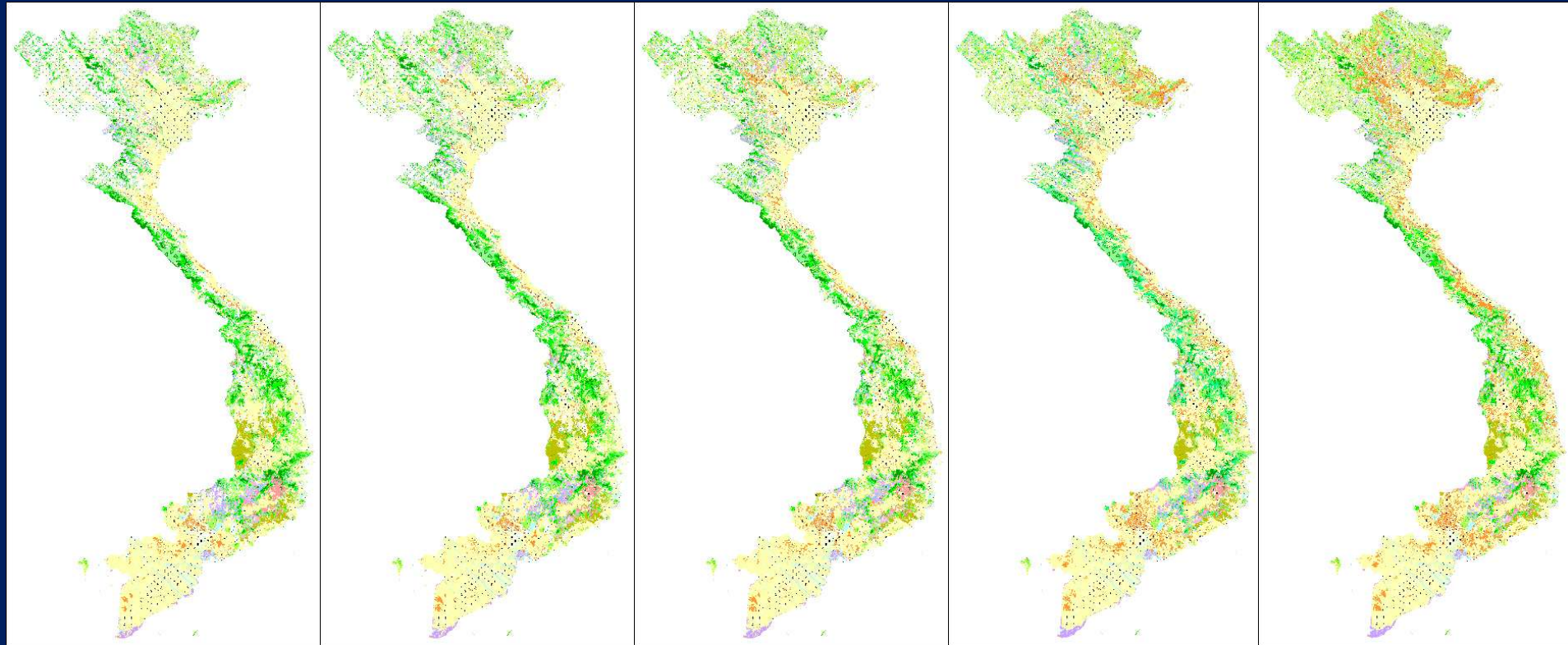
1990

1995

2000

2005

2010



27.2%

28.2%

34.3%

37.0%

39.5%

Landsat MSS, TM

SPOT3

Landsat ETM

SPOT5

2. NATIONAL FOREST COVER MAP 1990-1995

- Images: printed Landsat MSS, Landsat TM
 - Classification method: visually interpretation based on printed images
- Forest cover map, scale 1/100.000

3. NATIONAL FOREST COVER MAP 1996-2000

- Images: printed SPOT-3
 - Classification method: visually interpretation based on printed images
- Forest cover map, scale 1/100.000

4. NATIONAL FOREST COVER MAP 2001-2005

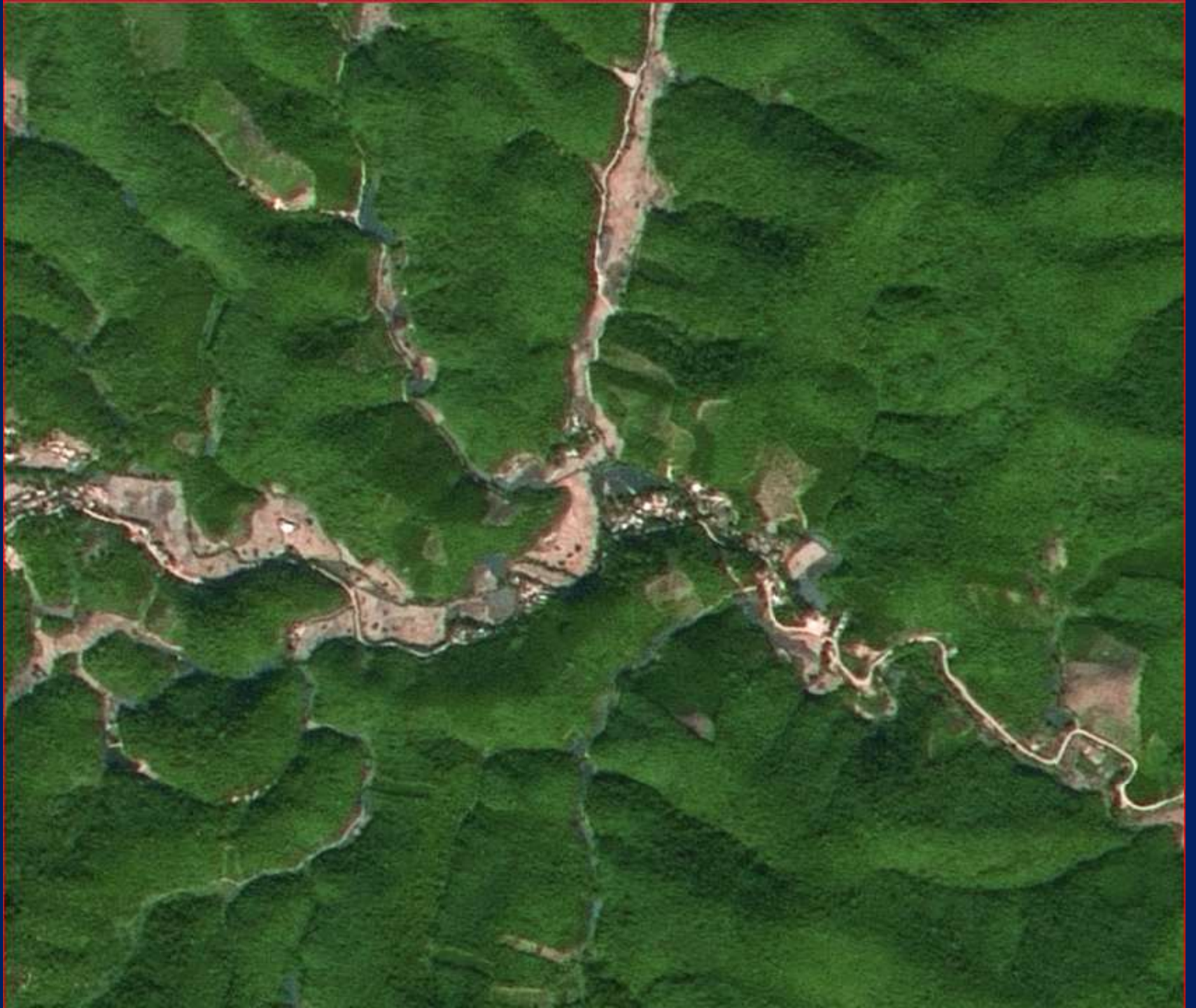
- Images: digital Landsat ETM+
 - Classification method: pixel-based digital classification
- Forest cover map, scale 1/100.000

5. NATIONAL FOREST COVER MAP 2006-2010

- Images: digital SPOT-5 images
 - Classification method: visually interpretation based on screen images
- Forest cover map, scale **1/25,000-1/50,000**

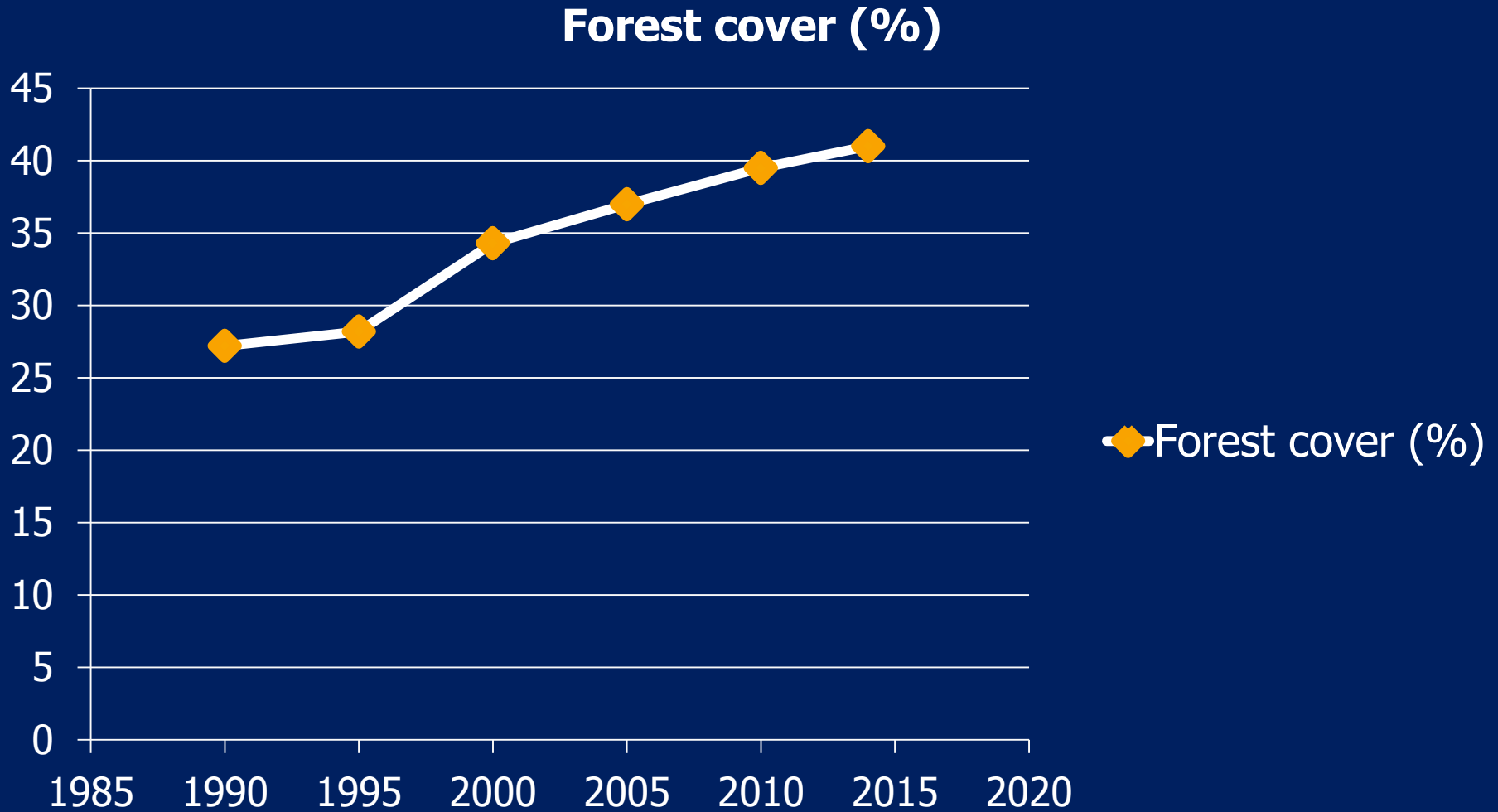
6. NATIONAL FOREST COVER MAP 2011-2016

- Images: digital SPOT-5, SPOT-6, VNREDSat-1...
 - Classification method: object-based digital classification
- Forest cover map, scale **1/10,000**



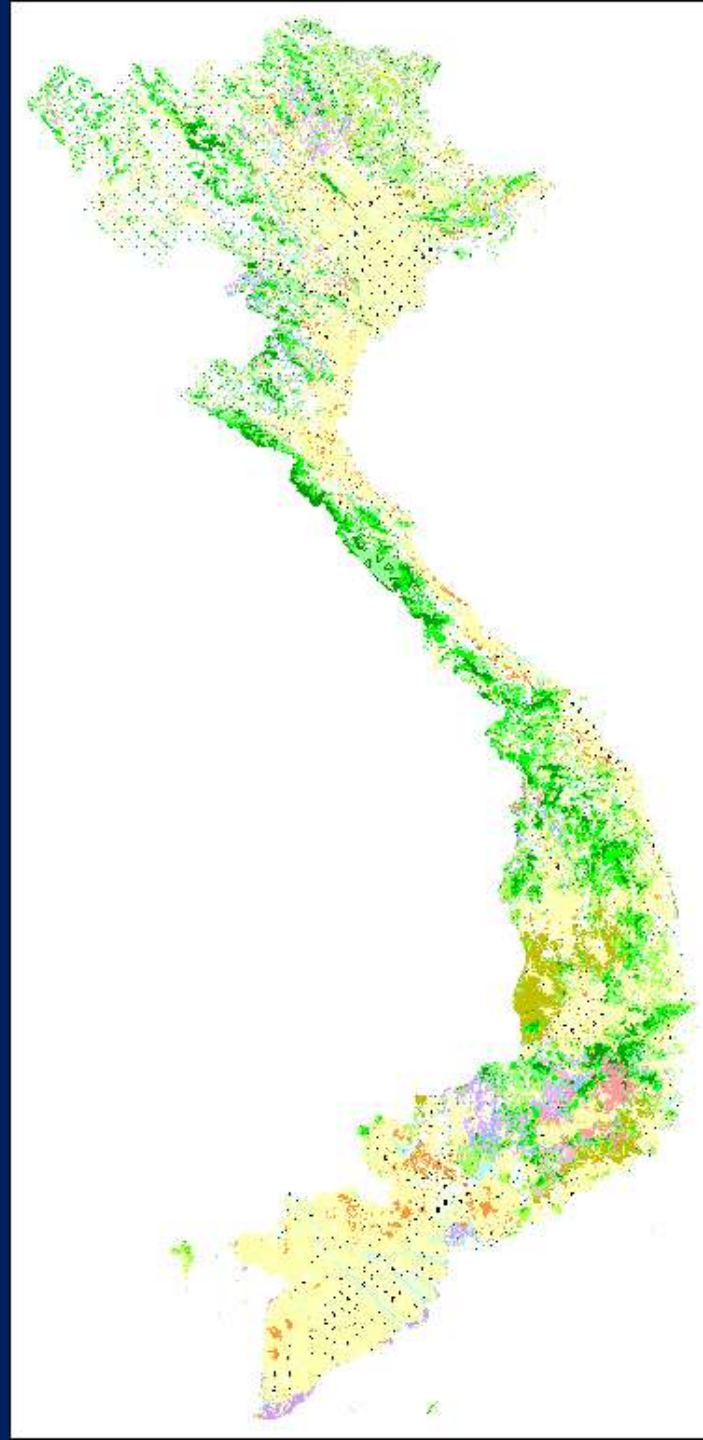


7. Forest cover changed during 1990-2010



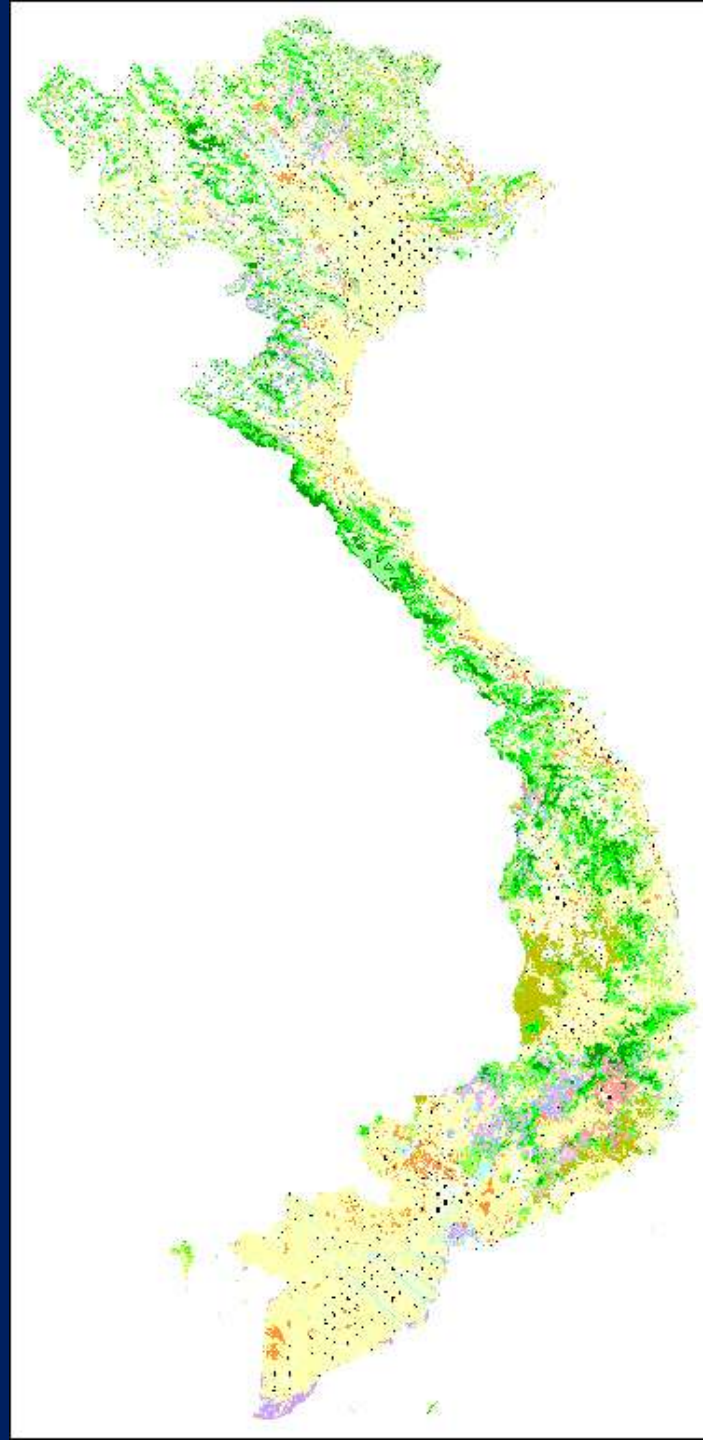
1990

27.2%



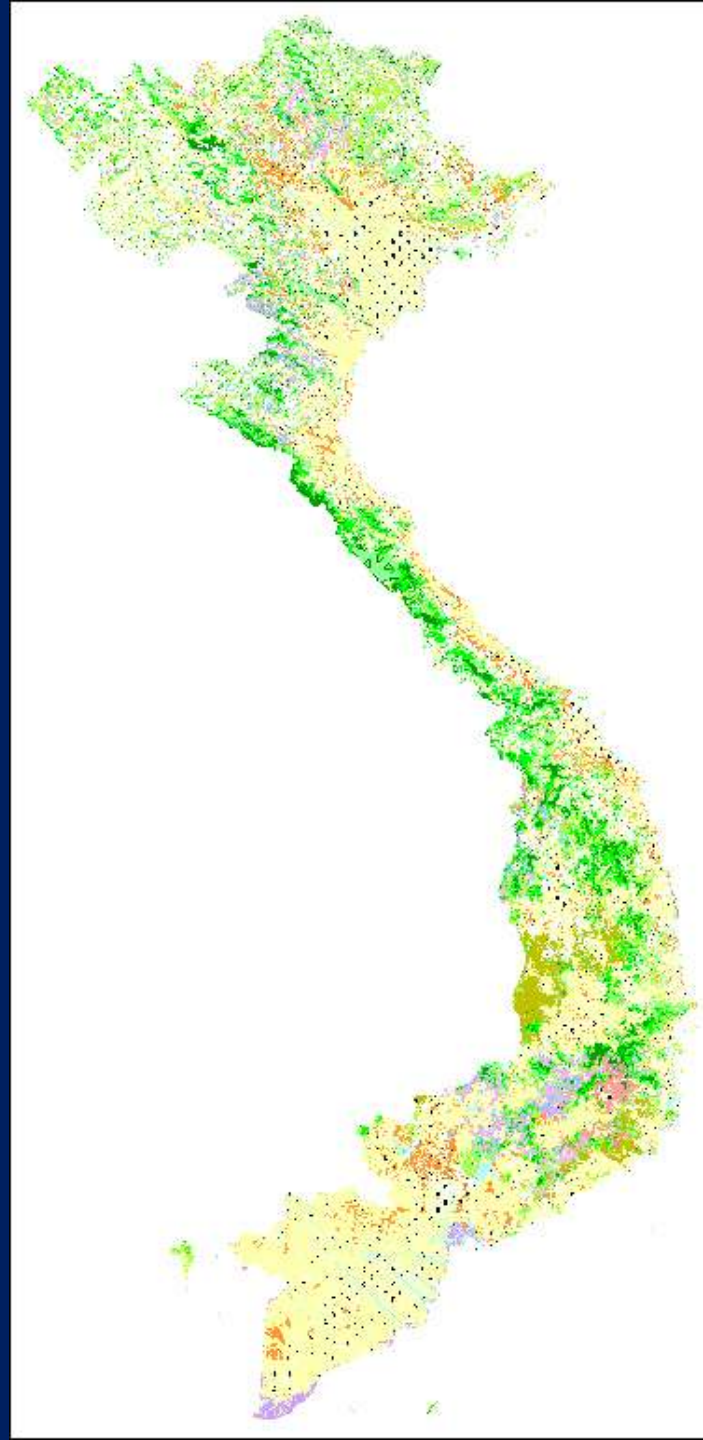
1995

28.2%



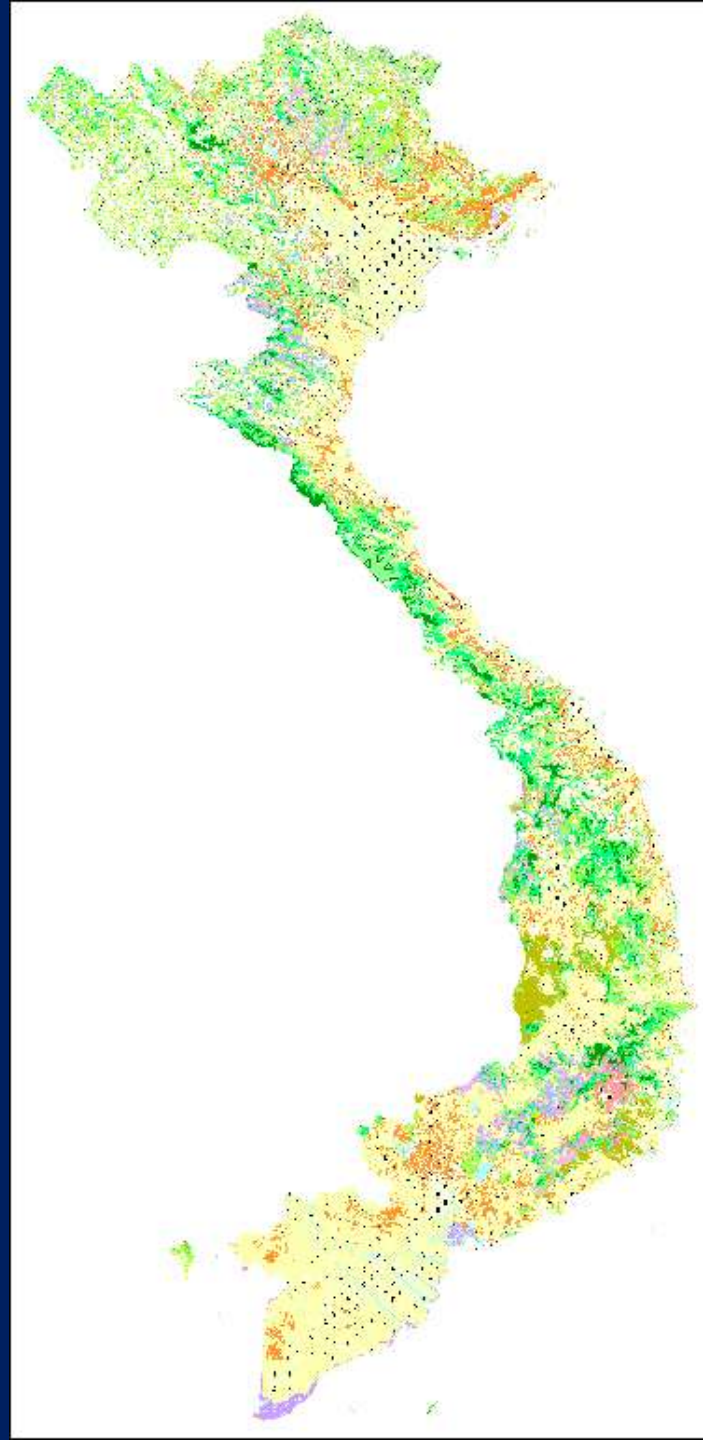
2000

34.3%



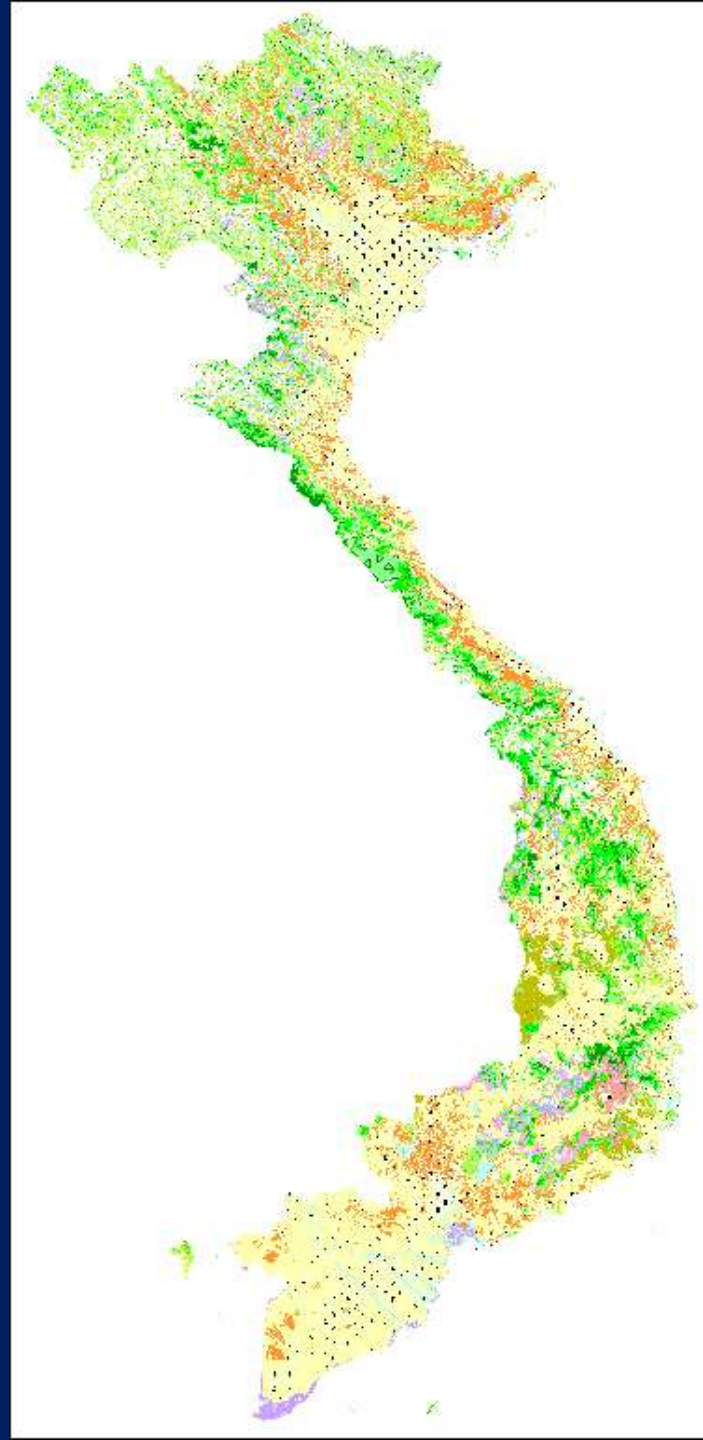
2005

37.0%



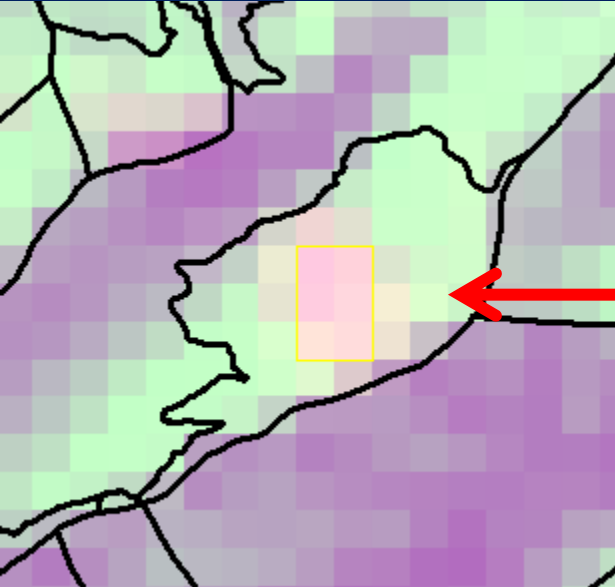
2010

39.5%



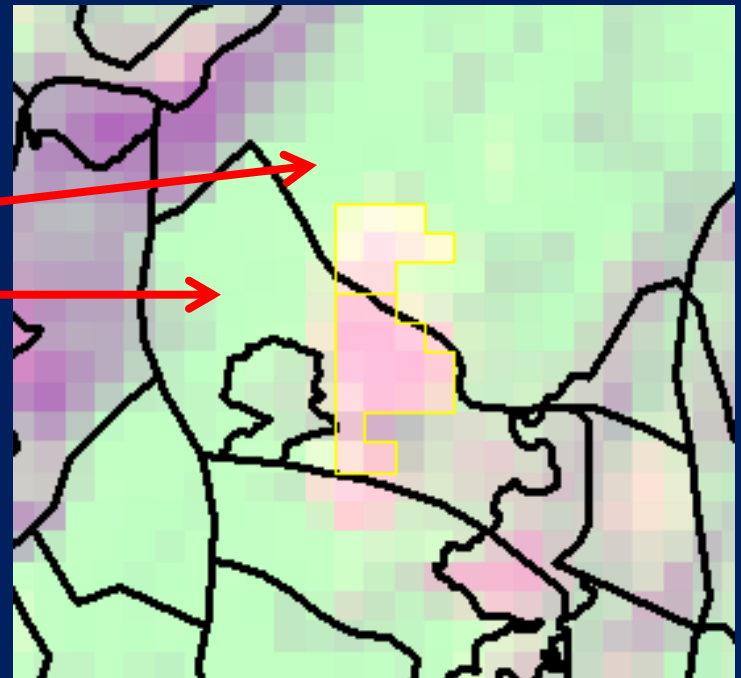
8. Updating FCM using DMCI, Landsat-8 images

- Annual updating is needed
 - How to know where these changes happen?
- Can we use medium resolution satellite images?



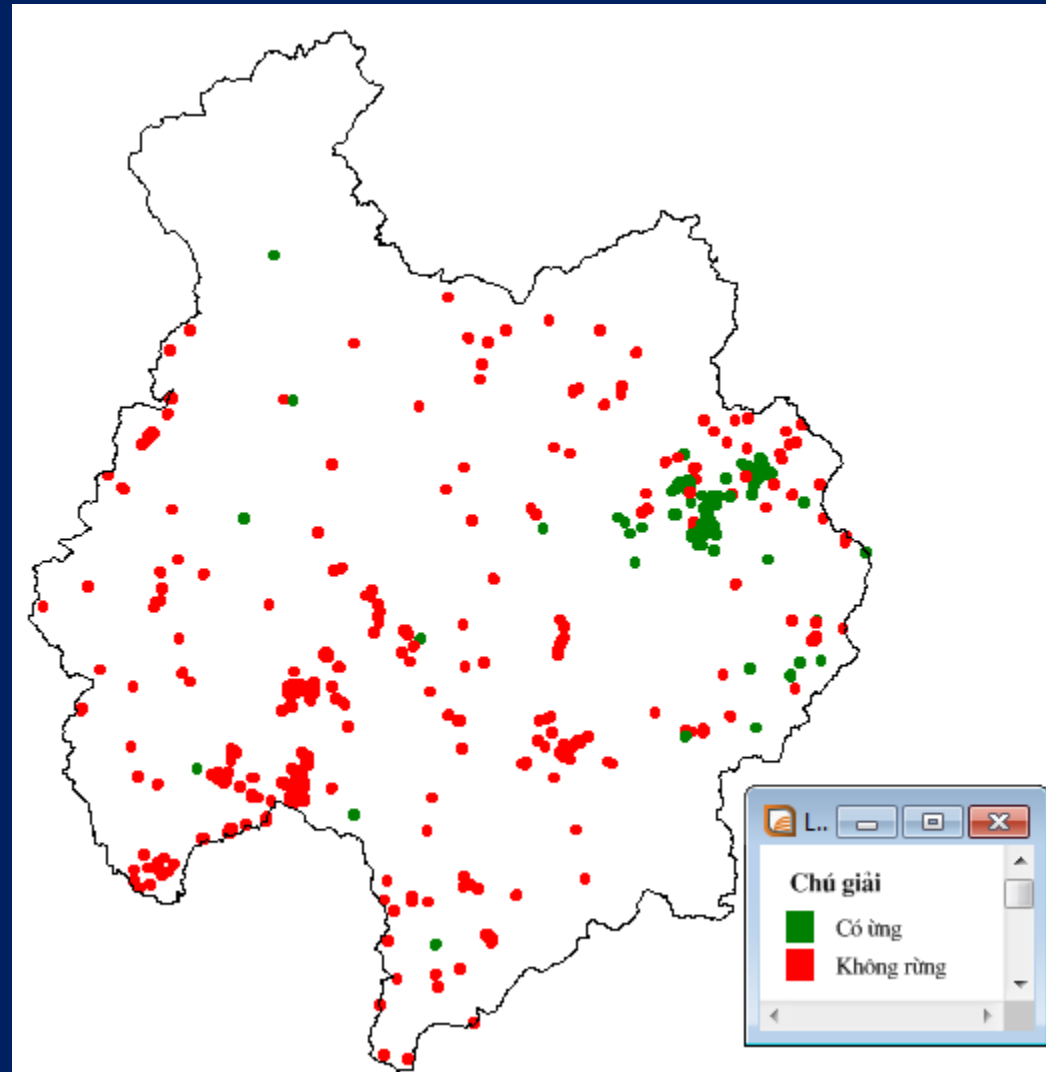
**Regrowth forest
→ Bare land**

**Mixed timber and
bamboo forest
→ Bare land**



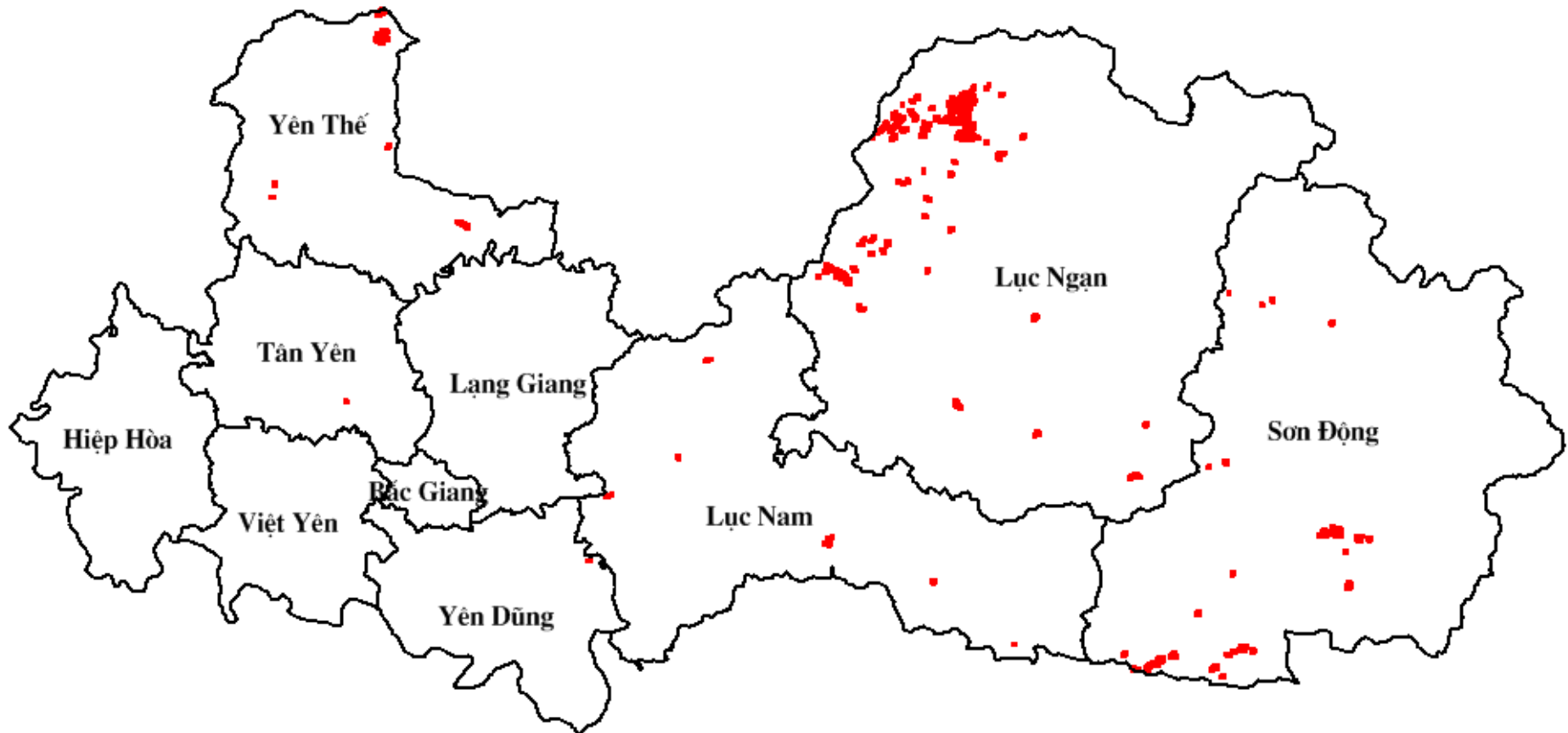
Case study in Bac Kan province

- Existing forest map
2011: 200.000 plots
- Landsat-8 taken in Dec
2013
- 478 problem plots!



Case study in Bac Giang

- Forest cover map 2013: 41.354 lots
- Landsat-8 taken in Oct 2013
- 193 problem plots





Thank you.

Ngo Van Tu

Tel: 0914.412.893 Email: tufipi@gmail.com

Forest Inventory and Planning Institute

Web: <http://www.fipi.vn>