

# ECOLOGICAL SAFETY AND ITS PHYSICO-GEOGRAPHICAL ASPECTS (in case of Khorezm region)

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# THE AIM AND OBJECTIVES OF INVESTIGATION

**Aim of the enquiry:** ecological safety and indicate its physico – geographical aspects by the example of Kharezsm region.

## **The objectives:**

- √ *Collecting, analyzing and generalizing information related to ecological safety;*
- √ *Indicating importance of ecological safety as the fundamental stage on providing national security in physical - geographical points of view;*
- √ *Clarifying the ecological safety concept and its' physical geographical aspects in scientific and theoretical points of view;*
- √ *Developing territorial, periodic and complex aspects of factors defining ecological safety in Khorezm region;*
- √ *Dividing into the ecological safety zones of Khorezm region.*

We advocate the ecological safety as *the protection level of organisms (humanity is as one organism here) and their environment from negative changes appearing under various scale and speed (suddenly and gradually) and their continuation.*

## ECOLOGICAL SAFETY FEATURES OF THE NATIONAL SECURITY

1. *Growing potential of armed conflicts in order to possess natural resources.*
2. *Direct human impacts to the environment and ecosystem .*
3. *Increasing migration of ecological refugees, fleeing both resource wars and direct ecological threats to health and livelihood .*
3. *Military training, weapon production, storage chemical, biological and nuclear weapons .*
4. *Existence threat of ecological terrorism.*
5. *Increasing ecological problems through deficiency of ecological thoughts and knowledge*

# Factors bringing to the ecological threats

## GROUPS

NATURAL

ANTHROPOGENIC

## CLASSES

Natural

Natural-anthropogenic

Anthropogenic-natural

Anthropogenic

## TYPES

Natural  
evolutionary

Natural  
suddenly

Natural  
anthropogenic  
evolutionary

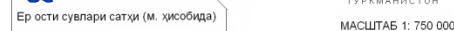
Natural  
anthropogenic  
suddenly

Anthropogenic  
natural  
evolutionary

Anthropogenic  
natural  
suddenly

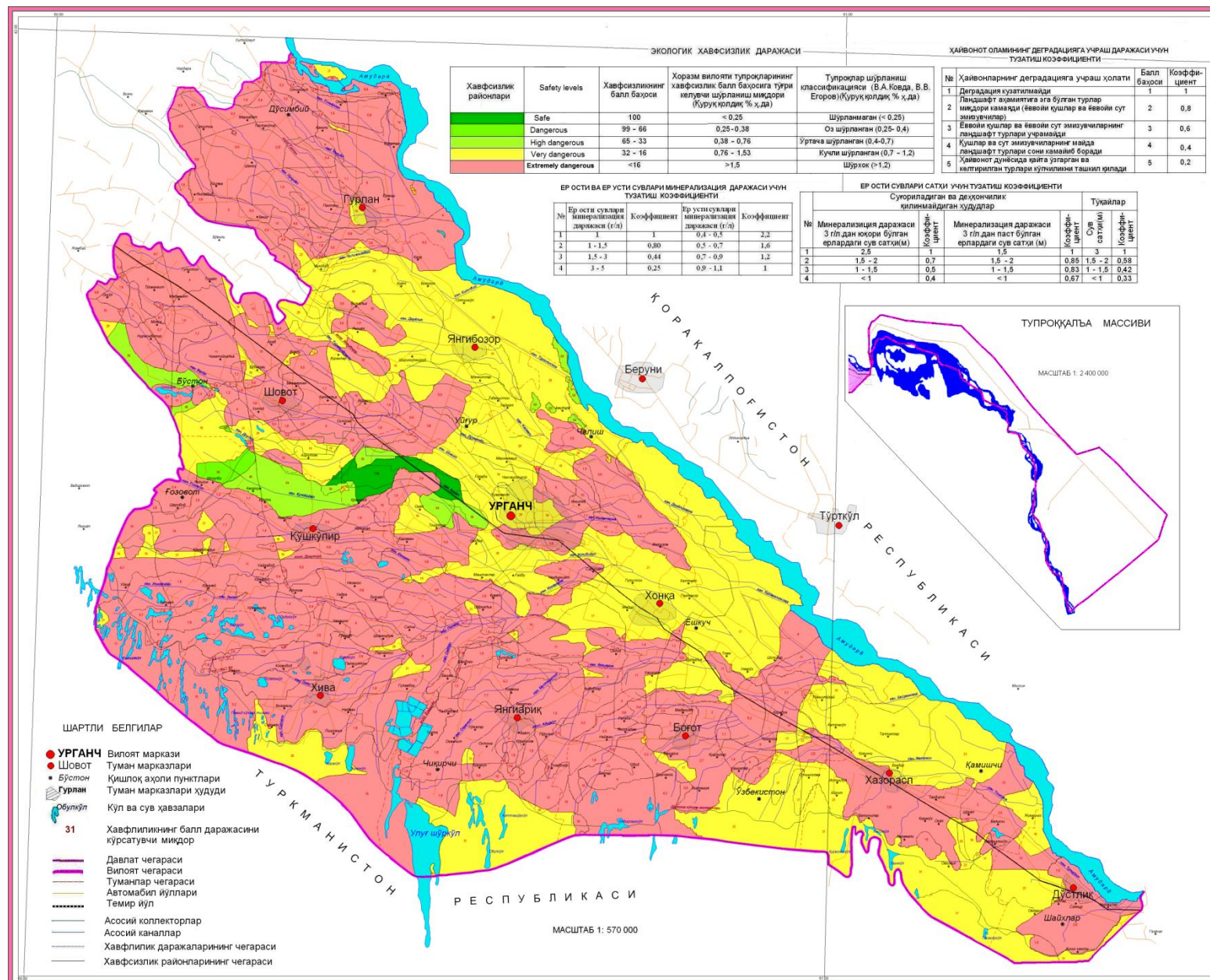
Anthropogenic  
evolutionary

Anthropogenic  
suddenly





# THE ECOLOGICAL SAFETY MAP OF THE KHOREZM VILOYAT

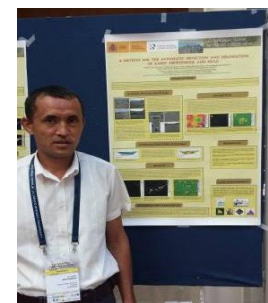
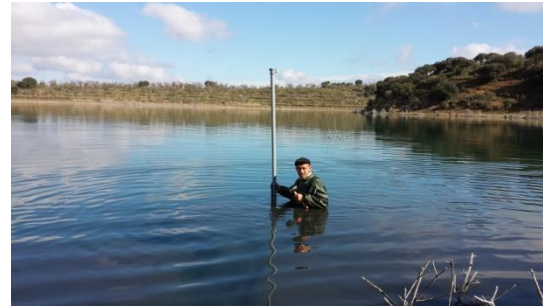
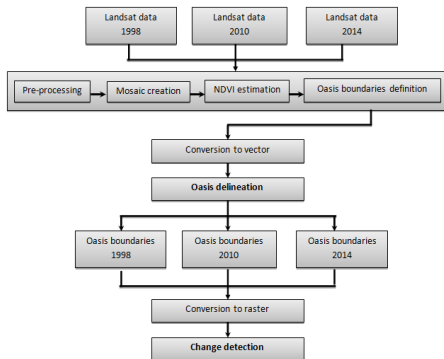
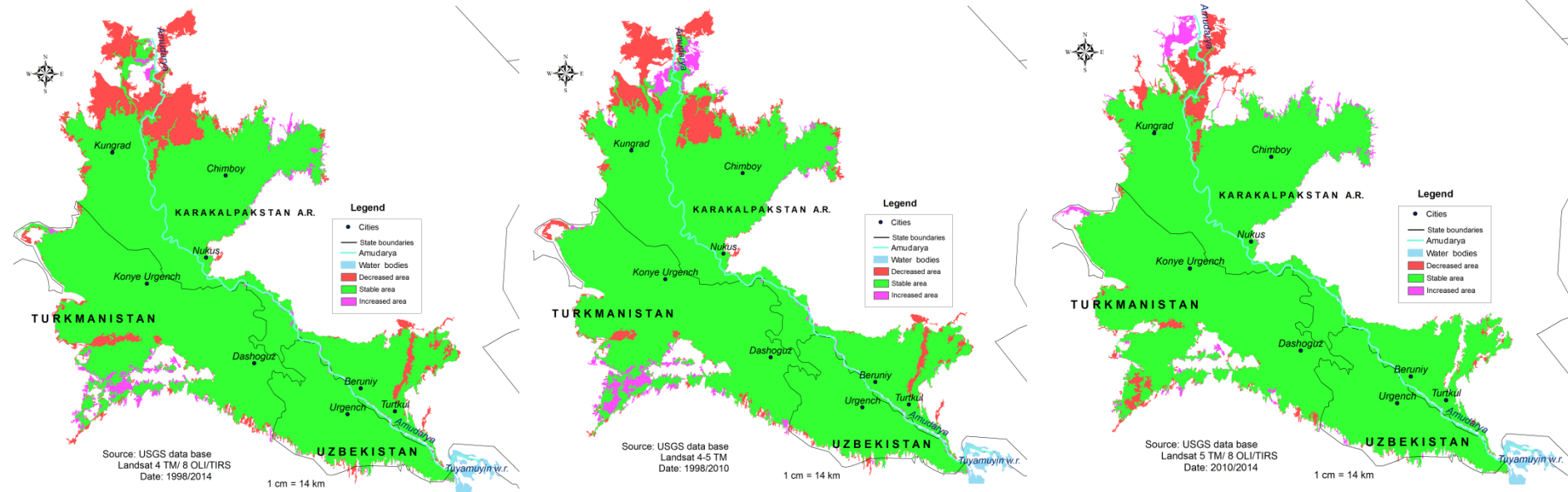


## SCIENTIFIC PROJECT EXPECTED TO CARRY OUT AT UMA

1. Presenting research work in order to discuss the theory and methods with supervisor.
2. Analyze the eco-safety evaluation related literatures in libraries and accessible on-line libraries in order to choose the best and acceptable methods.
3. Learn getting necessary data from space shuttle to analyze the real geographical and ecological conditions.
4. Develop physical geographical borders of the Khorezm oasis through satellite images according the theory of oasis conception (Because, the clear physical geographical borders of the oasis has not been created yet).
5. Identifying ecosystem types of study area by land cover classification.
6. Create DEM of the Khorezm oasis in order to evaluate morphological structure, slope, topography and relief types of the irrigated lands.
7. Study theory and application of GIS in order to work with RS data.
8. Learn evaluation opportunities of GIS for the eco-safety (participate GIS course lectures and work with supervisor).
9. Participate course of lecture/field trips related to the evaluation of the ecological safety level or environmental assessment.
10. Participate in scientific seminars and conferences related to the eco-safety and remote sensing to be familiar with innovations and to publish results.



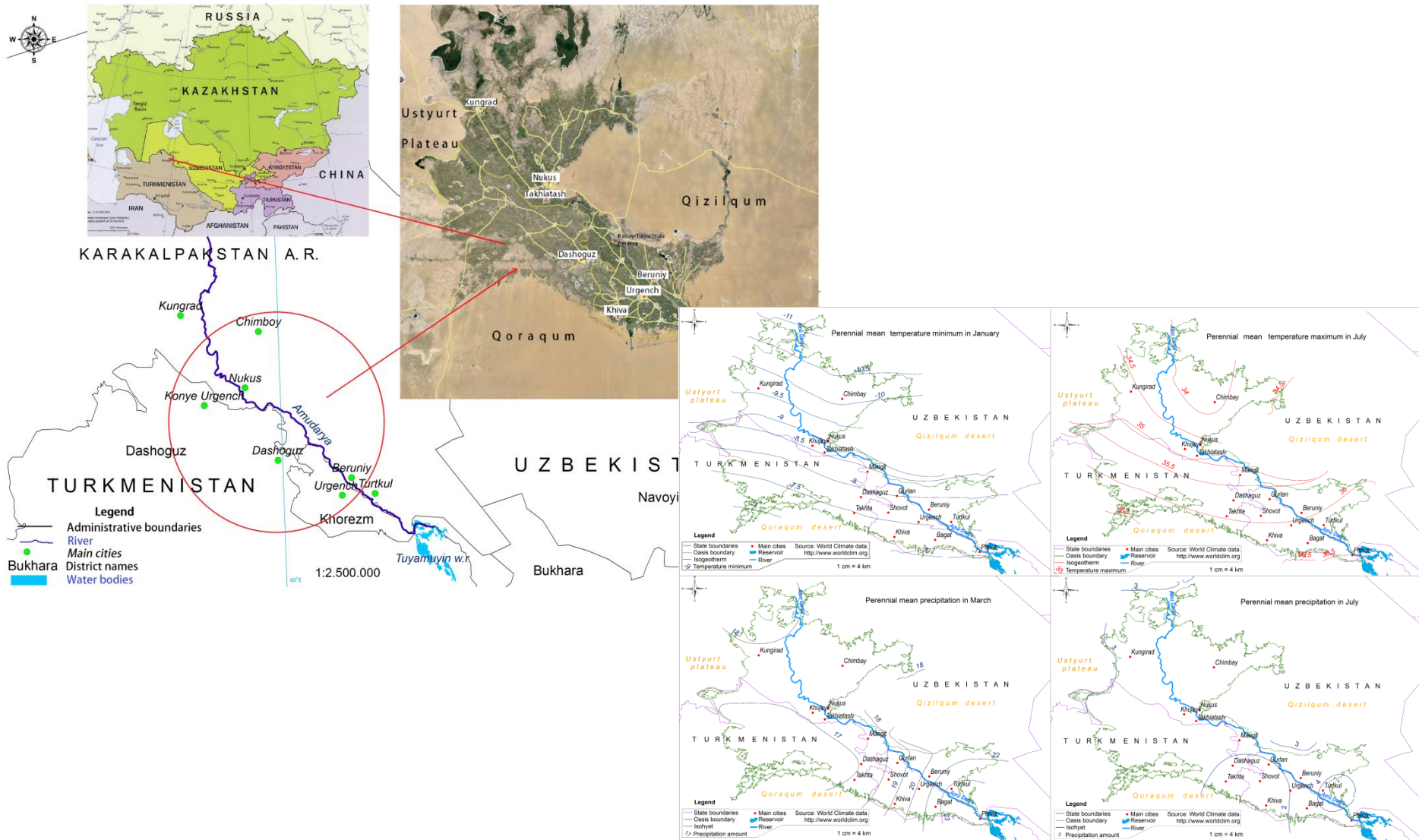
# EVALUATION ECOLOGICAL SAFETY LEVEL OF KHOREZM OASIS BY SPACE IMAGES





# LAND COVER CLASSIFICATION AND LAND COVER CHANGE ASSESSMENT OF KHOREZM OASIS, UZBEKISTAN, USING LANDSAT IMAGES

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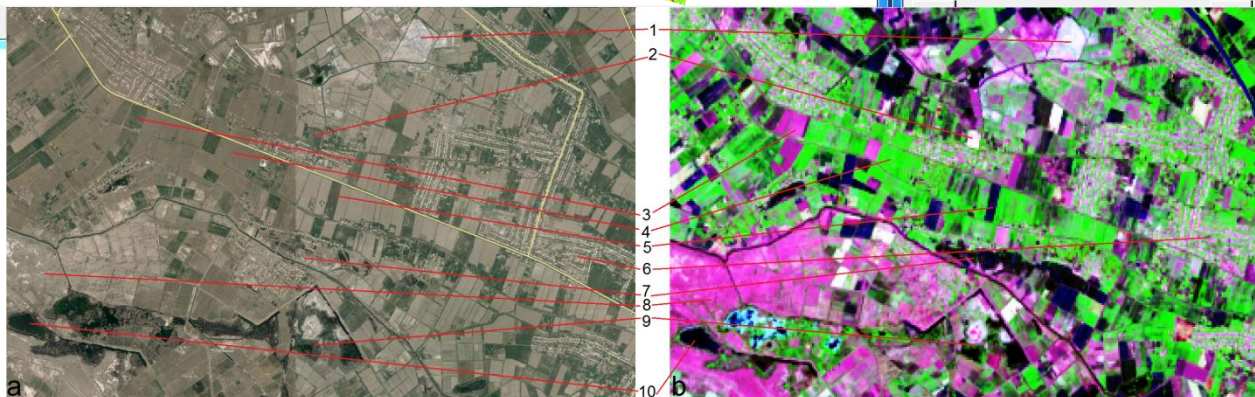
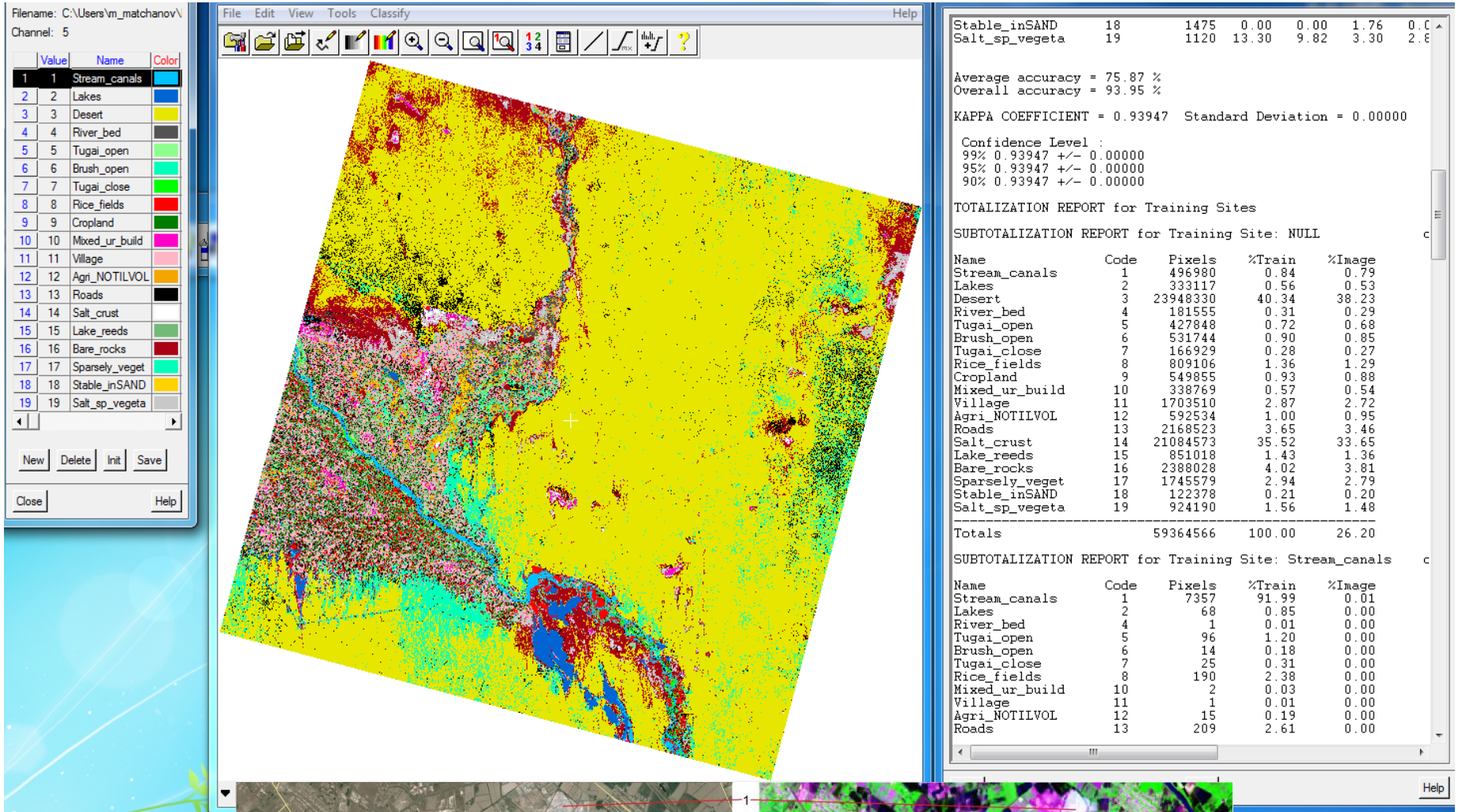


Figure "a" (Wikimapia.org in 04.13.2014/05.28.3013) and "b" (Landsat 8 OLI in 24.07.2014) presents Mehnatobod and Boston farmers association in Shovot district of Khorezm viloyat. Landsat image was described by PCI Geomatica with 7:5:3 false color combination and features compared with real condition.



Thanks for your attention