

UNITED NATIONS / AUSTRIA / EUROPEAN SPACE AGENCY SYMPOSIUM
WATER FOR THE WORLD: SPACE SOLUTIONS FOR WATER MANAGEMENT

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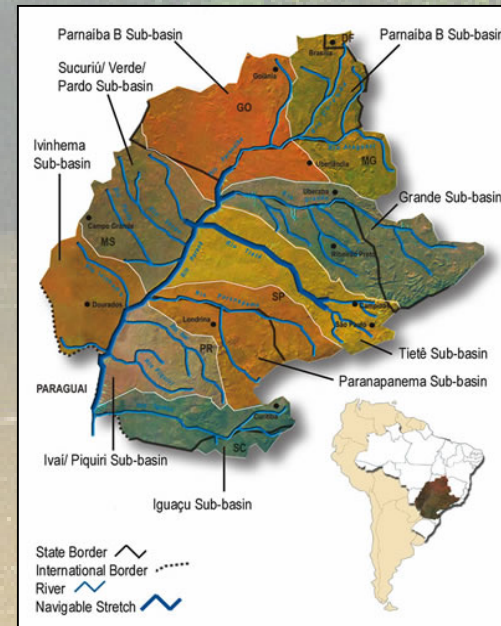
**MAPPING PRIORITY AREAS FOR FOREST
COVER RESTORATION TO SUPPORT PUBLIC
POLICIES FOR WATER RESOURCES
PROTECTION**

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BACKGROUND

BRAZIL : water in abundance, but unevenly distributed.

In regions highly populated, water (in terms of quantity and quality) is already a problem.



Source:
A.N.A.

BACKGROUND

PIRACICABA AND REGION : suffering with the pollution of the Piracicaba River since the 1970's (industry, alcohol/sugar mills and domestic sewage).



BACKGROUND

Two well-defined seasons:

RAINY SEASON (October through March)



BACKGROUND

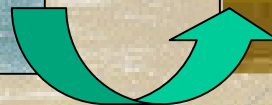
DRY SEASON (April through September)



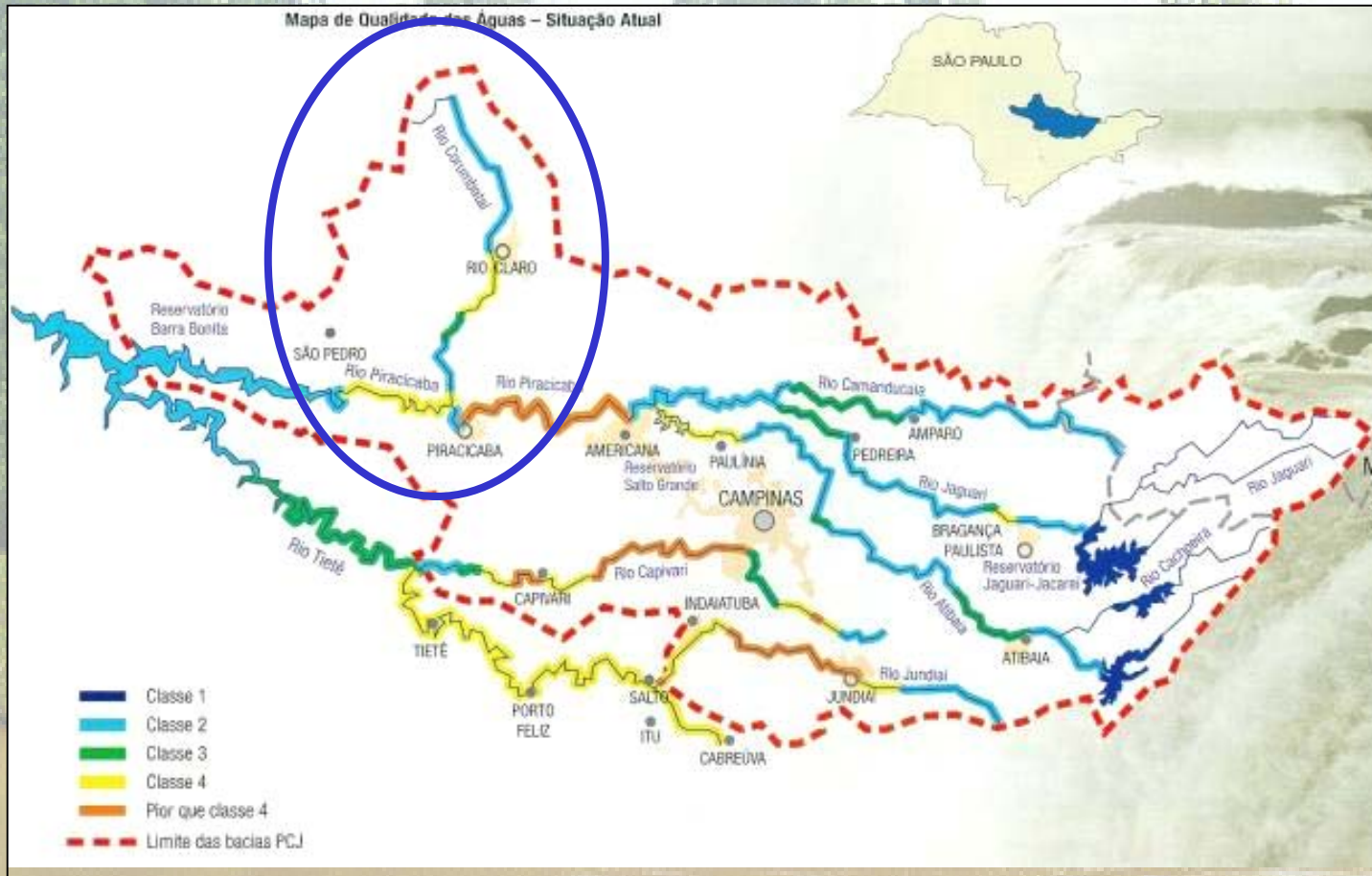
BACKGROUND

Water treatment became economically unfeasible (concentration of pollution).

Consequence to Piracicaba: transfer of water withdrawal for public supplying from the Piracicaba River to the Corumbataí River (2000).



BACKGROUND



BACKGROUND

Corumbataí River Basin (1700 km²) is also highly impacted, mainly by agriculture and cattle ranching activities, that occupy areas originally covered by Atlantic Rain Forest and savannas.

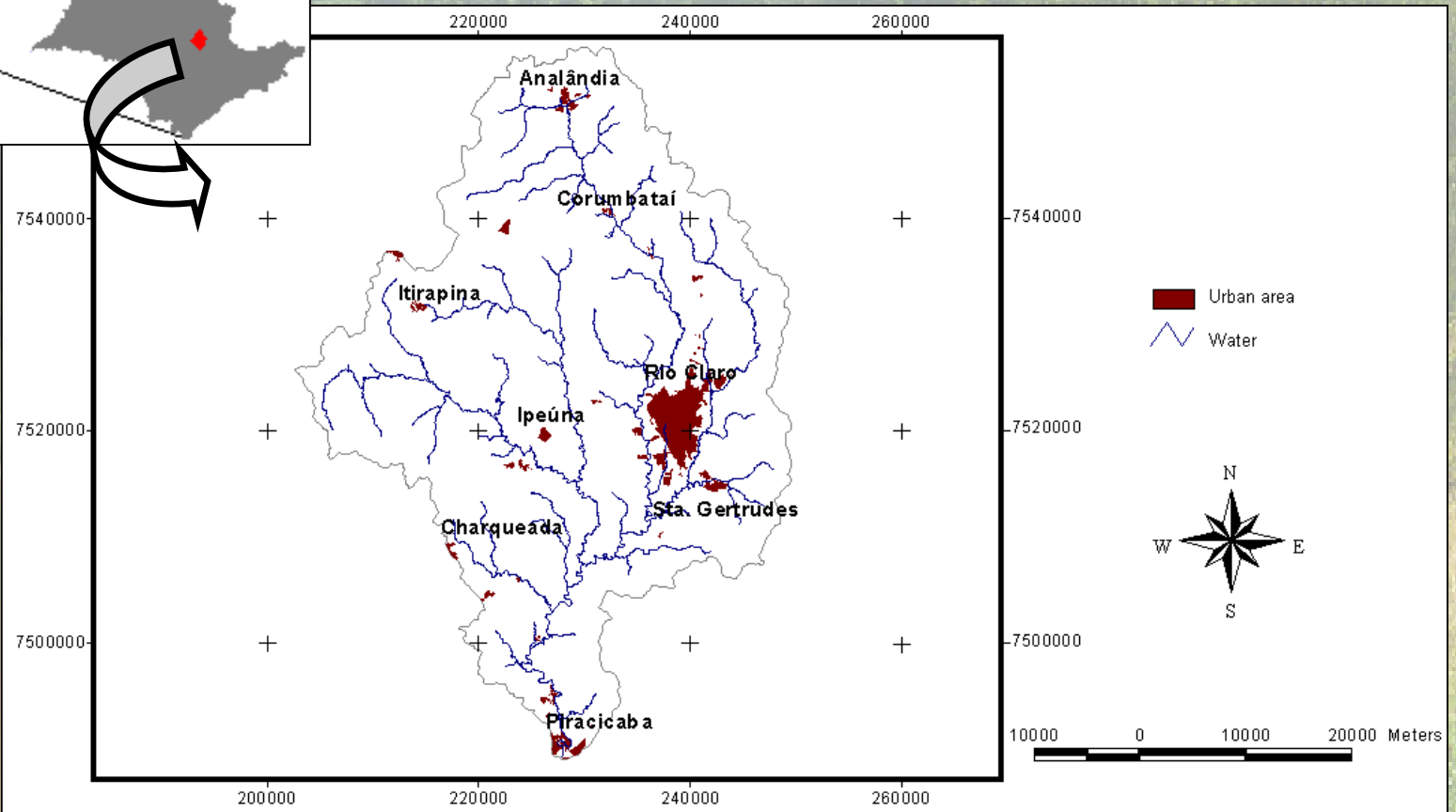
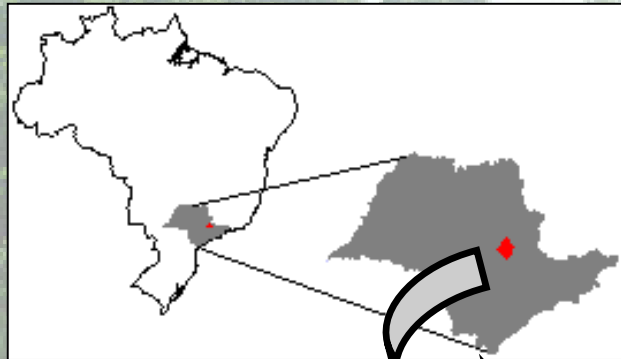


1. INTRODUCTION

The loss of forest cover in a river basin has an important influence on water quality and quantity so, in 1999 it was established a 3-year agreement between the Water Department of Piracicaba (SEMAE) and the Forest Research Institute/University of São Paulo (IPEF/USP) for the development of a **Director Plan** for the Corumbataí River Basin, aiming at forest restoration and conservation.

1. INTRODUCTION

CORUMBATAÍ RIVER BASIN



1. INTRODUCTION

Project Branches:

1. Geospatial technologies: definition of priority areas for forest planting and conservation;

2. Tropical forestry: definition of native species, appropriate to each different local condition and development of related technology;

3. Hydrology: relationship forest cover / water

2. DEFINITION OF PRIORITY AREAS

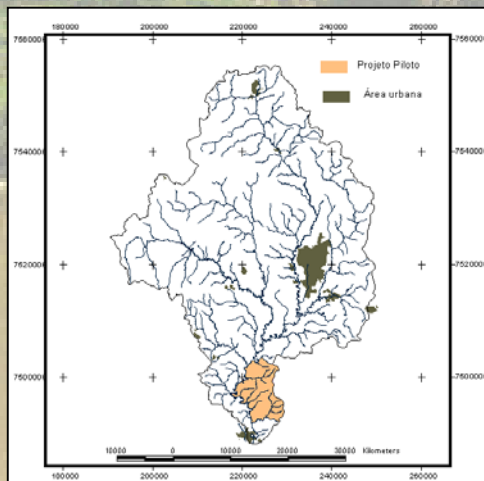
2.1. Generalities

Digital Thematic Cartography

Remote Sensing

Satellite Positioning System

Geographic Information System



Definition of priority areas:

Pilot Project x River Basin

2. DEFINITION OF PRIORITY AREAS

2.1. Generalities

APPROACH : MULTI-CRITERIA / SINGLE OBJECTIVE

CRITERIA : FACTORS AND CONSTRAINTS

DEFINITION OF FACTORS : PARTICIPATORY TECHNIQUE

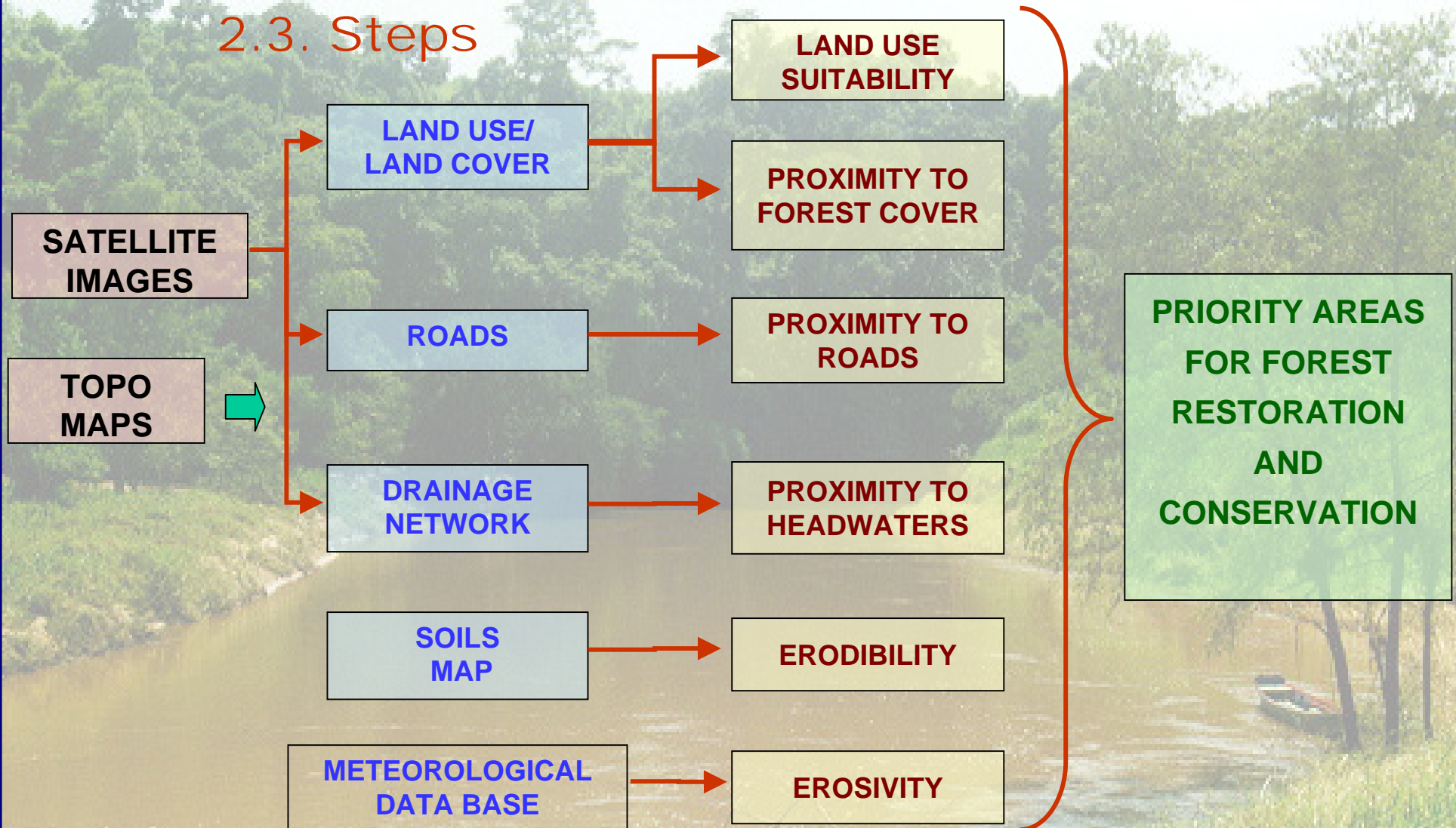
WEIGHTS OF THE FACTORS : PAIRWISE COMPARISON MATRIX

**PRIORITY AREAS MAP GENERATION : WEIGHTED LINEAR
COMBINATION (GIS)**

RESULTS CHECKS: FIELD INSPECTION

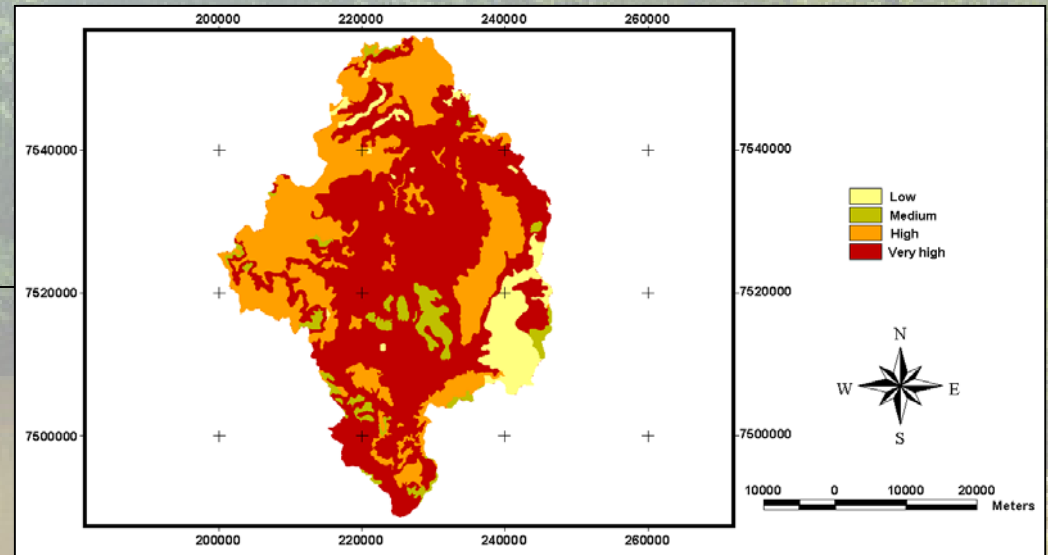
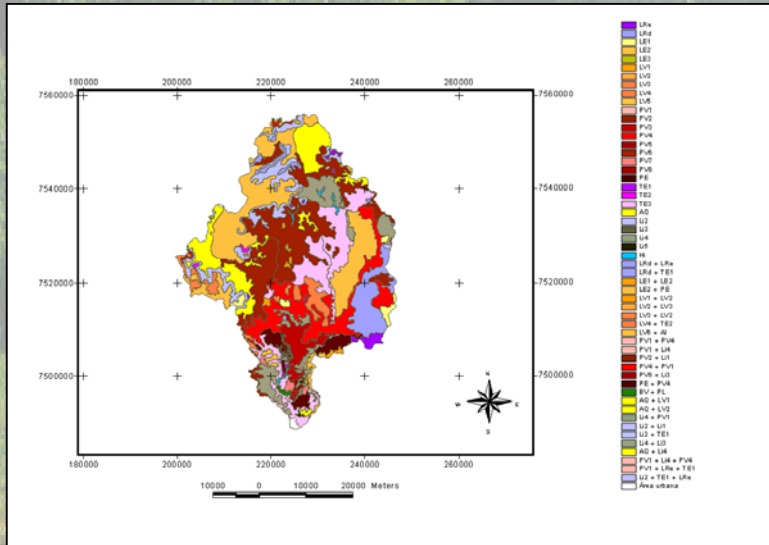
2. DEFINITION OF PRIORITY AREAS

2.3. Steps

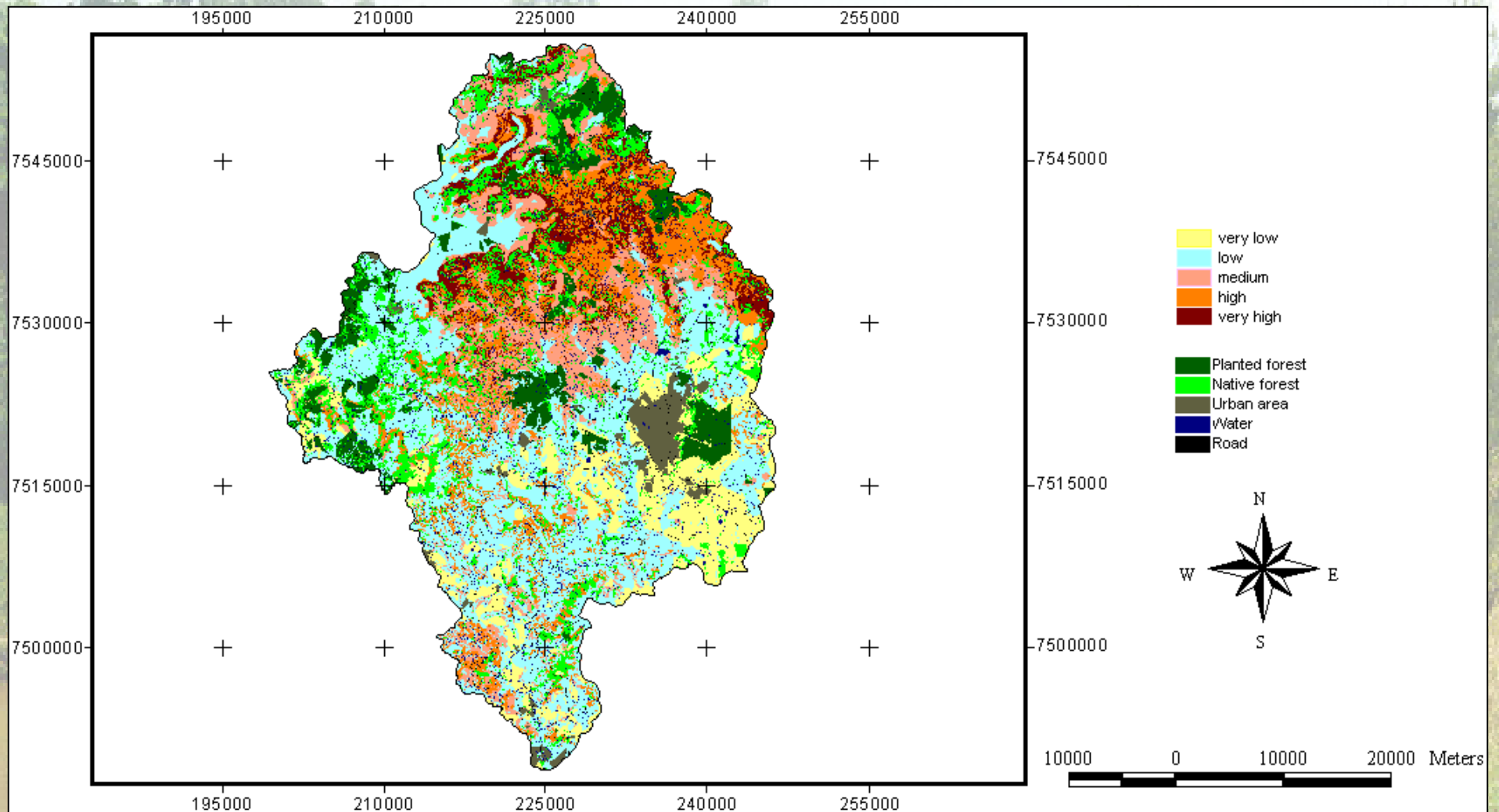


2.4. Factor Maps (Criteria)

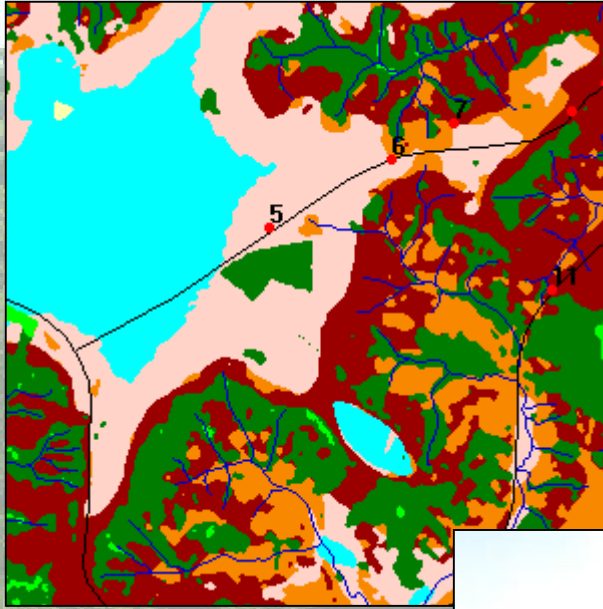
An Example: Erodibility



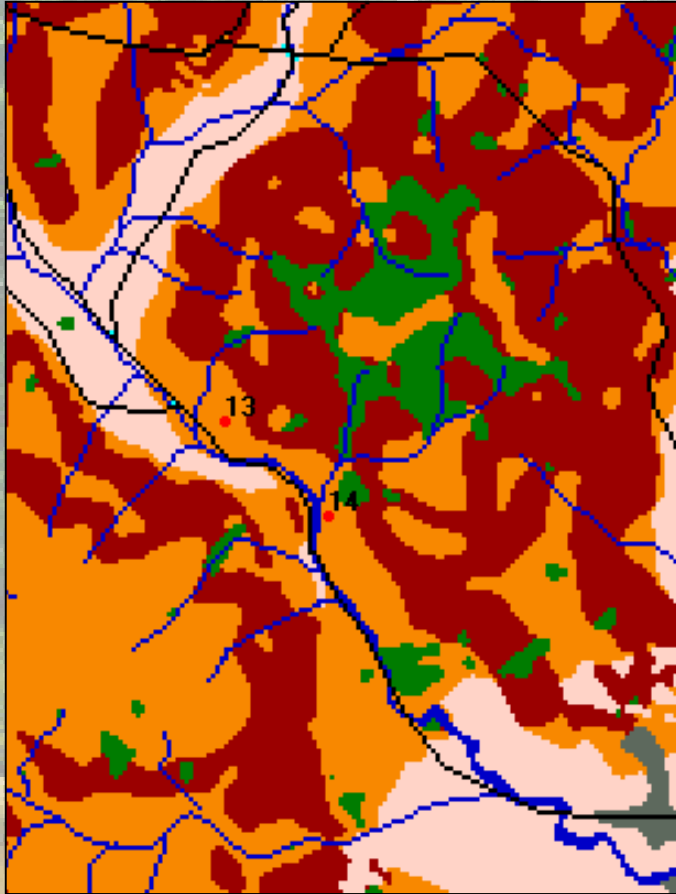
2.5. Map of Priority Areas



2.6. Field Inspection



2.6. Field Inspection



3. PARTNERS

Water Department of Piracicaba (SEMAE)

Director Plan:

University of São Paulo (USP)

Forest Research Institute (IPEF)

Selection of Appropriate Tree Species:

State of São Paulo Forest Institute

3. PARTNERS

**Seedlings Production and Environmental Education:
Piracicaba Municipal Secretariat of
Environment and Planning**

**Selection of Interested Land Owners, Planting and
Monitoring:**

**Intermunicipal Consortium of the Piracicaba,
Jundiaí e Capivarí River Basins.**

3. FUNDING

Director Plan:

Water Department of Piracicaba (SEMAE)

Planting and Monitoring:

**Intermunicipal Consortium of the Piracicaba,
Jundiá e Capivarí River Basins**



4. MAIN OBSTACLES

**A. DIFFICULT COMMUNICATION BETWEEN:
AGRONOMISTS/FORESTERS AND CIVIL ENGINEERS
AGRONOMISTS/FORESTERS AND ADMINISTRATORS;**

**B. DIFFICULTIES WITH THE CHANGE OF THE MUNICIPAL
ADMINISTRATION;**

C. LACK OF A REGIONAL DIGITAL DATABASE.

D. RESTORATION IS AT A VERY SLOW PACE

5. CONSEQUENCES

A. DIGITAL DATABASE OF THE RIVER BASIN AVAILABLE (TO SCIENTISTS, STUDENTS, DECISION/POLICY MAKERS ETC.);

B. INCREASINGLY LOCAL AWARENESS ON THE IMPORTANCE OF REMOTE SENSING AND GIS FOR ENVIRONMENTAL PLANNING;

C. SIMILAR PROJECTS TO OTHER AREAS HAVE BEEN REQUESTED;

ETC.

5. CONSEQUENCES

**NEXT GENERATION OF DECISION
MAKERS...EDUCATION**



5. CONSEQUENCES

**FARMERS INTERESTED IN
RESTORING FOREST AREAS**



5. CONSEQUENCES



**FARMERS RESTORING
FOREST AREAS**





MAPPING PRIORITY AREAS FOR FOREST COVER
RESTORATION TO SUPPORT PUBLIC POLICIES FOR
WATER RESOURCES PROTECTION

OUR TEAM

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THANK YOU !

