

Geoscientific knowledge and skills in African Geological Surveys

GAP analysis of geoscientific mapping

40 Years Listening to the Beat of the Earth

ACTIVITY 4

Activity 4: GAP analysis of mineral resources assessment



COORDINATION

Leader: Esko Korkiakoski (GTK- Geol. Survey of Finland)

4.1 Primary and secondary resources

Deputy - Duska Rokavec (Geo-ZS: Slovenia)

4.2 Artisanal and small-scale mining (ASM)

Deputy - John Tychsen (GEUS- Denmark)

4.3 Mining and the environment

(including post-mining)

Deputy - Joanna Lindahl (SGU- Sweden)

Supported by Bohdan Kribek (CGS- Czech)



OBJECTIVES 4.1

- 4.1 Primary and secondary resources
- Analysis of Mineral resource development (metals, minerals and aggregates)
- Sustainable aggregates supply
- Capacity building of OAGS members in the mineral resource exploration and management



TASKS 4.1

- **4.1 Primary and secondary resources**
- to establish joint research programmes that would identify interests of African partners
- to increase communication among stakeholders
- to improve the capacity building of OAGS and other stakeholders
- to exchange and implement good practices in the areas of objectives within the framework of resource supply and demand management and plans



DELIVERABLES 4.1

4.1 Primary and secondary resources

D 4.1.1 Selection of case studies on mineral resource development (metals, minerals and aggregates)

D 4.1.2 Planned workshop dissemination of results (by 30.3.2014)



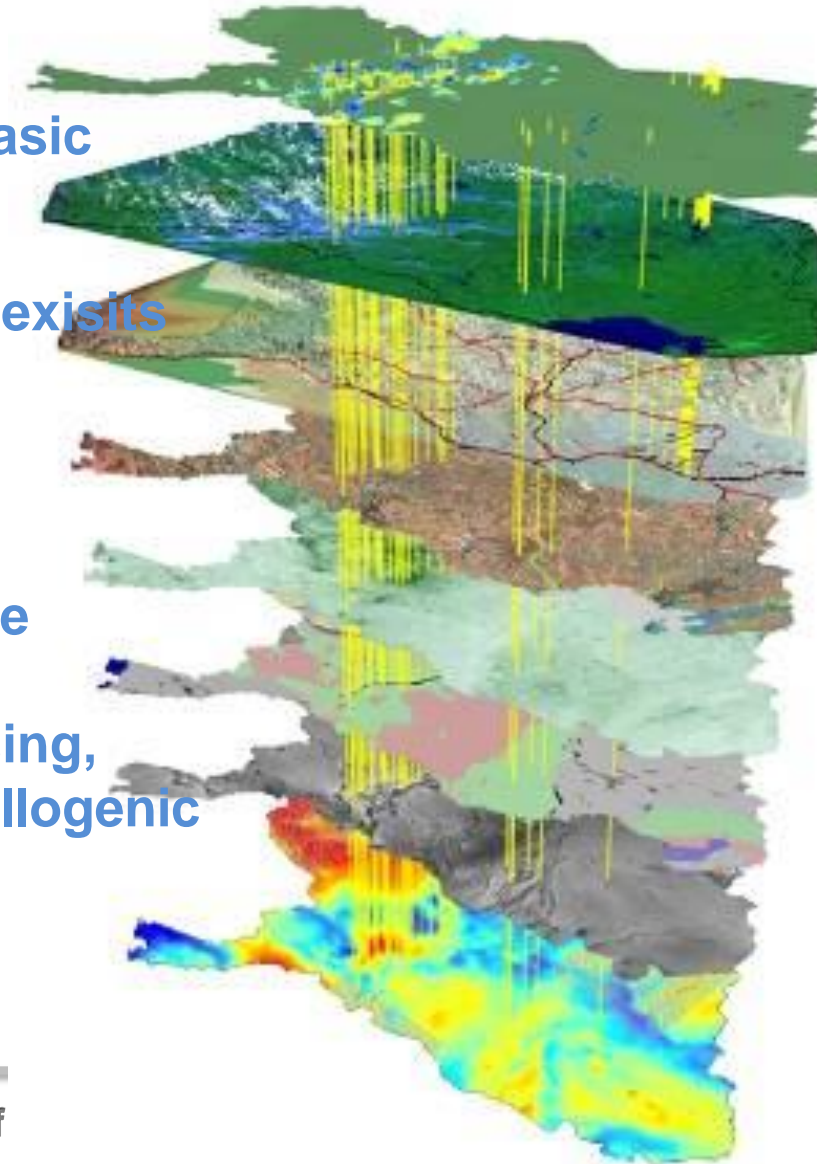
PRACTICAL APPROACH TO 4.1

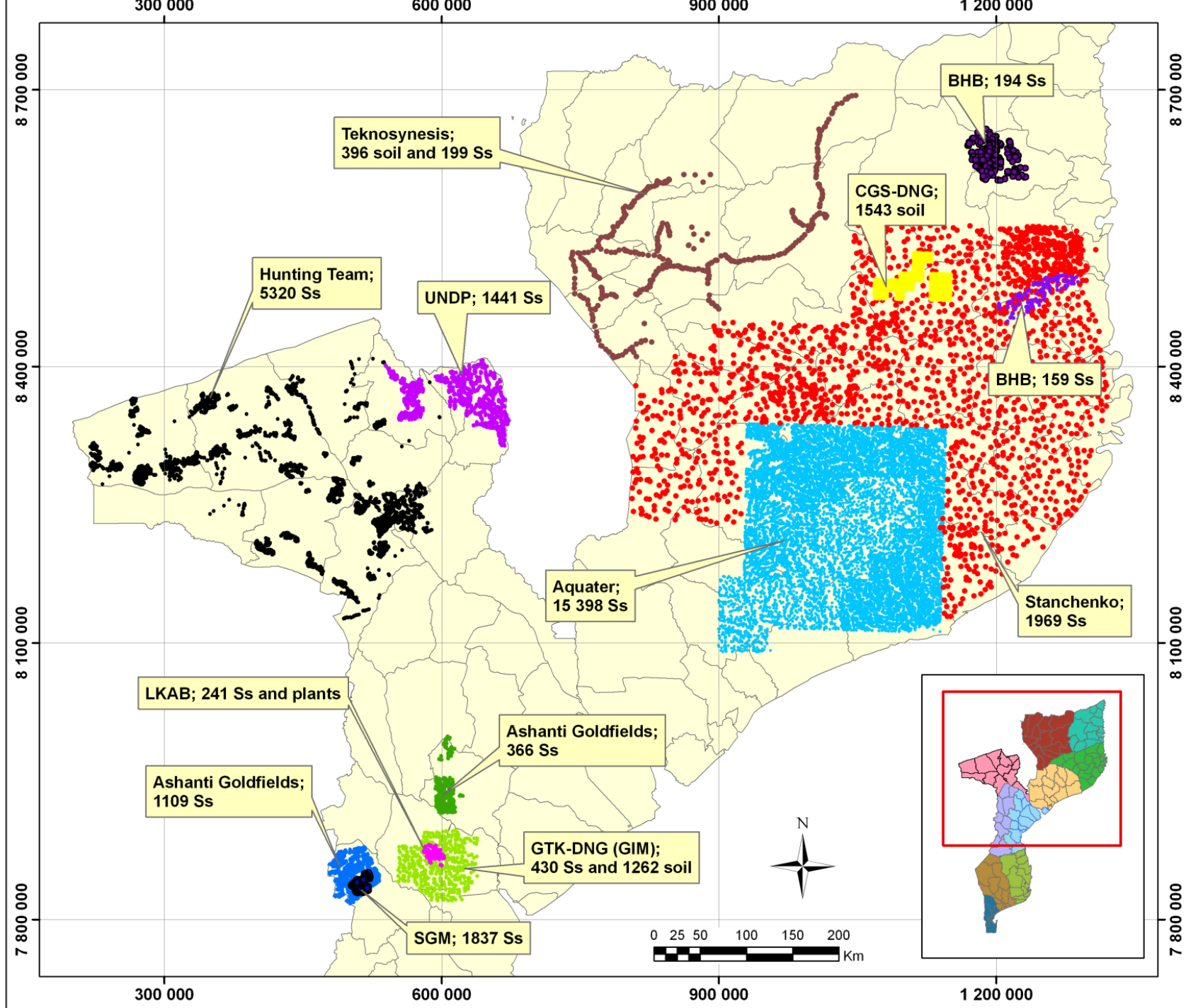
4.1 ORE POTENTIAL MAPPING: The basic function of most surveys

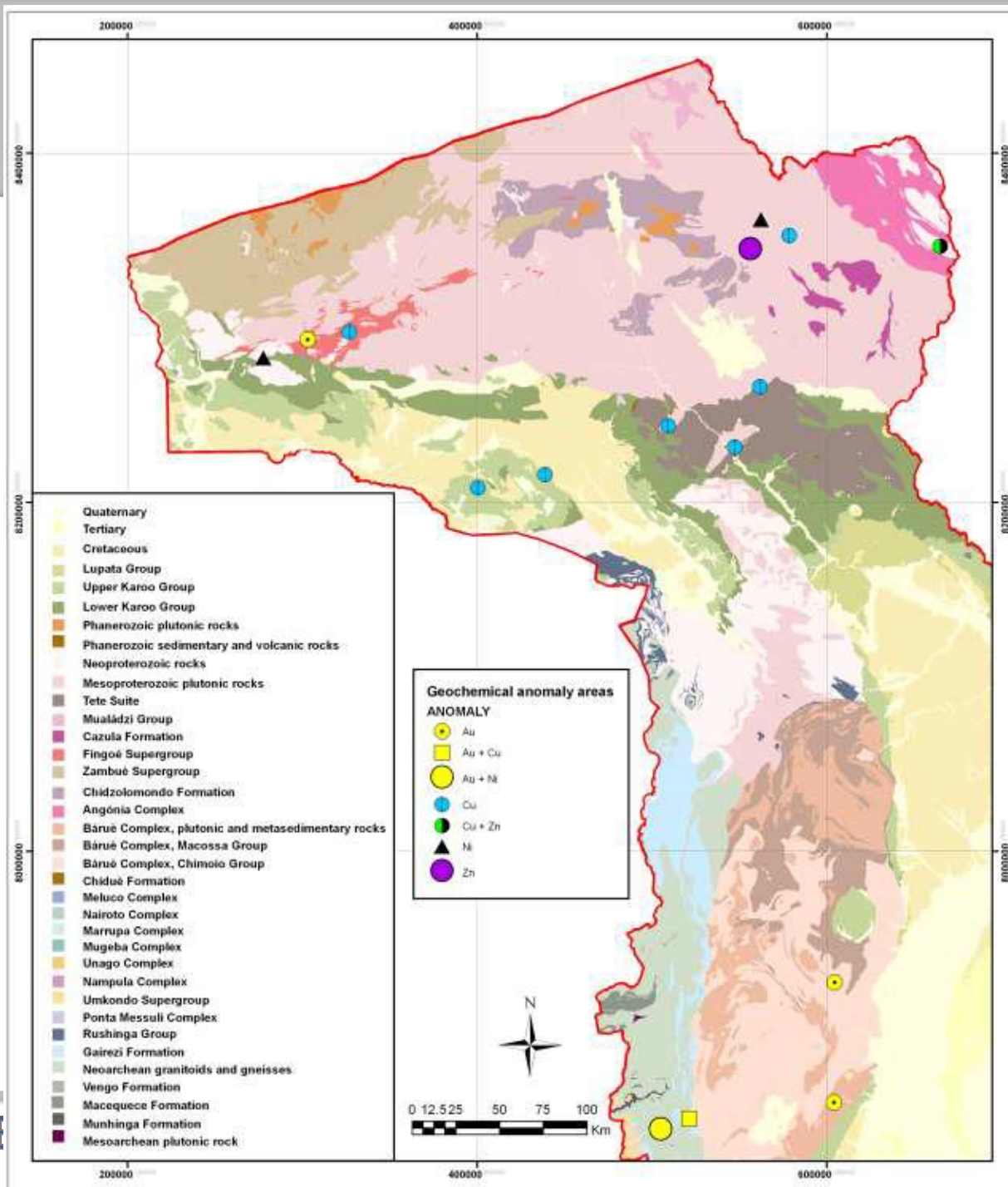
Lot of different geodata (e.g.. AEGOS) exists but is underused in terms of data integration and interpretation and professional skills

- 1) Availability of data: selection of the collaborative countries and areas
- 2) Unification of the data for processing,
- 3) Defining new potential areas/metallogenic zones (incl. modern techniques)
- 4) Field checking/mapping

Where → depends on data







Cu-content in stream sediment

Hunting_final1

Hunting_Ss_anal.CU_PPM

◇ 1 - 32

○ 33 - 79

● 80 - 328

● 329 - 971

KThU_rgb.ecw

RGB Composite

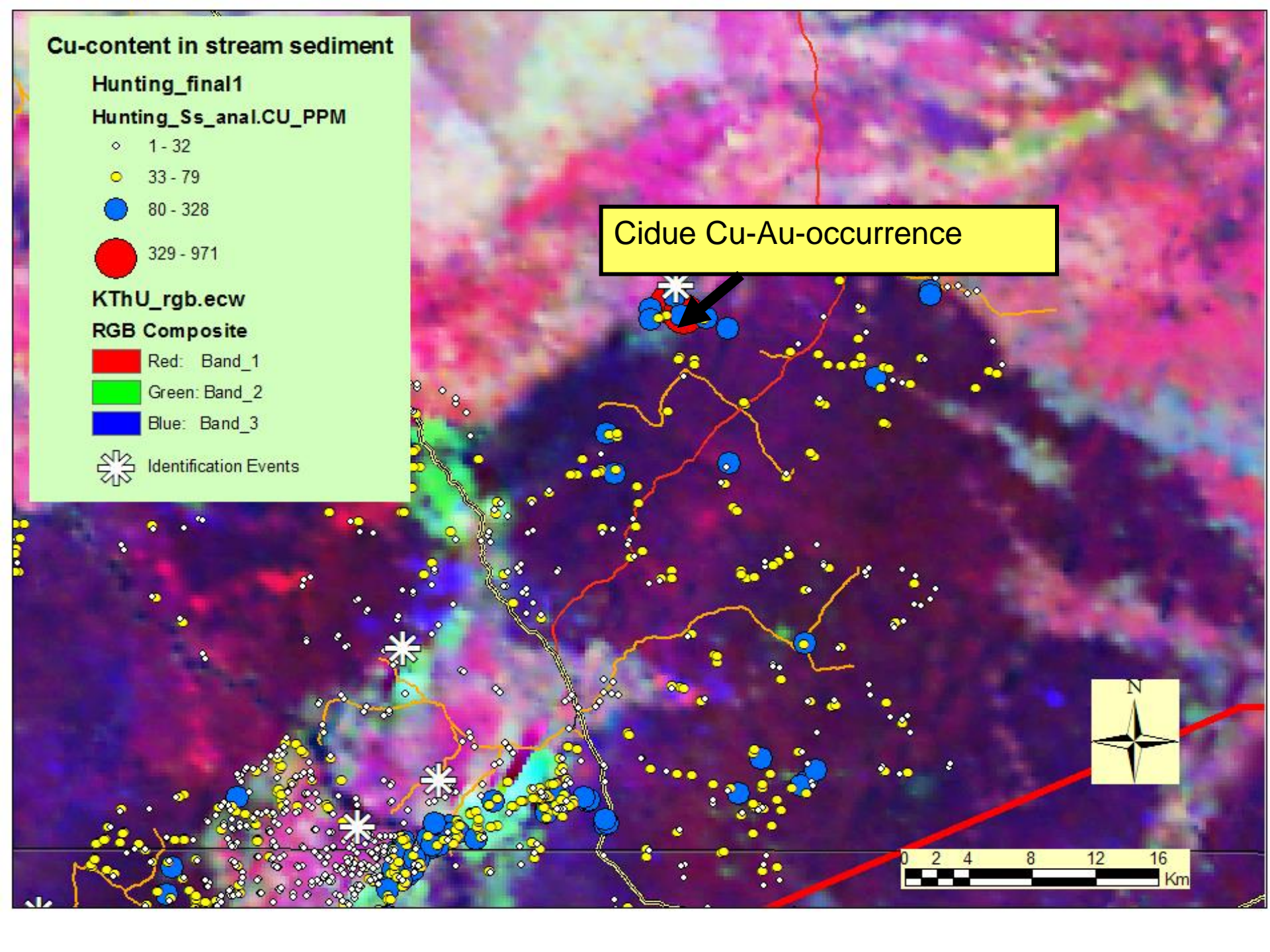
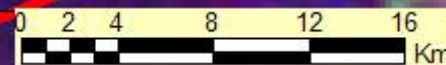
Red: Band_1

Green: Band_2

Blue: Band_3

✱ Identification Events

Cidue Cu-Au-occurrence



Uganda NDF Geochemistry

Stream sediment survey

Legend

SS_all

Cu_ppm

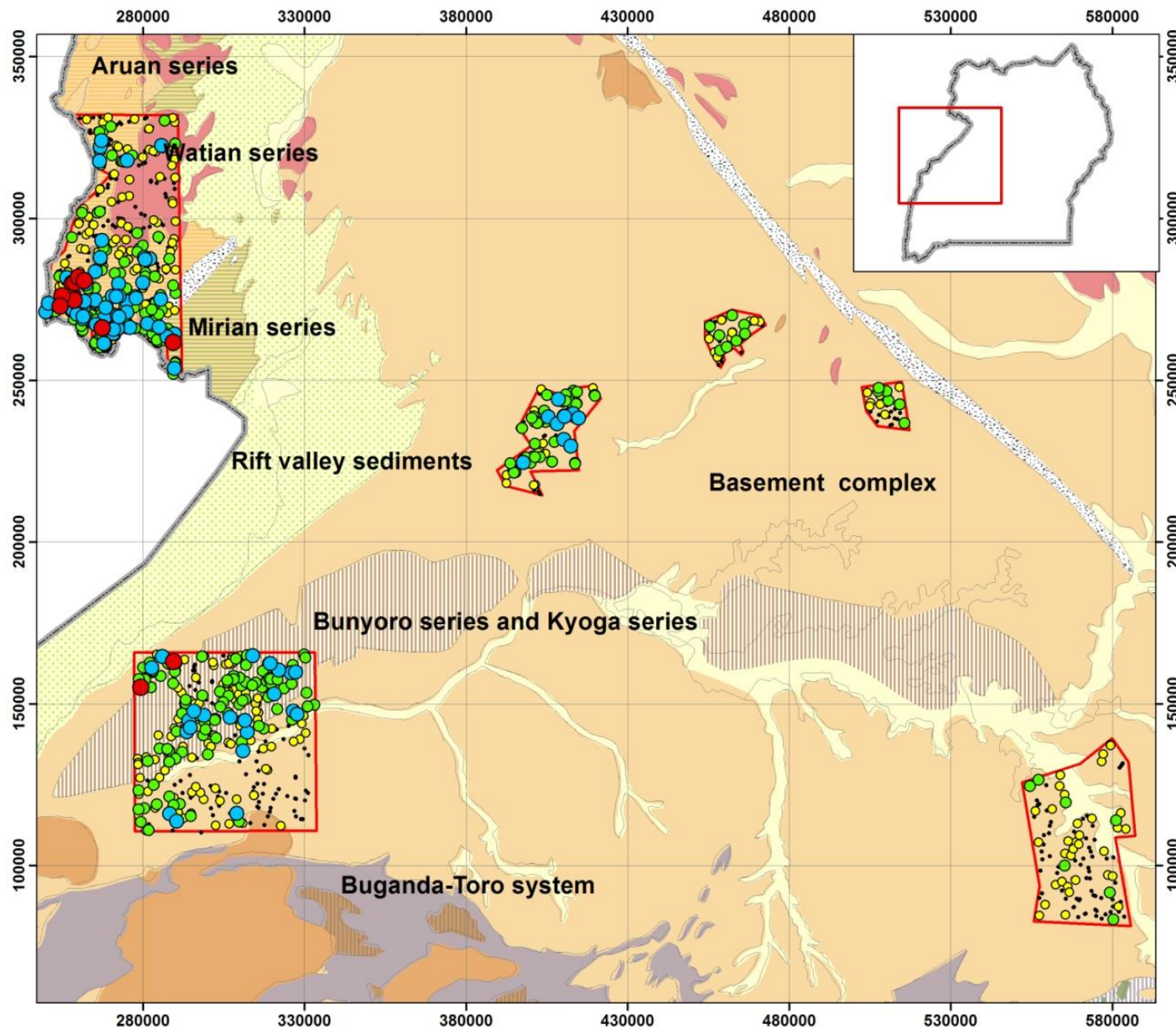
- 2 - 16
- 17 - 27
- 28 - 42
- 43 - 79
- 80 - 167



0 25 50 100 km



Coordinate system;
WGS84 UTM Zone 36N



OBJECTIVES 4.2

4.2 Artisanal and small-scale mining (ASM)

- to define a training programme to provide the OAGS members with a better understanding of the ASM operators in respective countries.
- trained participants will be able to provide better geological and technical advice to ASM operators and train ASM operators to improve their performance



TASKS 4.2

4.2 Artisanal and small-scale mining (ASM)

By questionnaire (1) to find out OAGS members involvement in assisting ASM operators and advising the authorities responsible for issuing licensees.

(2) comprise information about capabilities of individual OAGS members to fulfil these obligations and,

(3) make gap analysis

The role of “the survey” in the “Ministry of Mines”

The role of “the survey” as advisor to the licensing authorities

“the surveys “ experiences with assisting ASM operators

Overview of ASM activities in respective country



DELIVERABLES 4.2

4.2 Artisanal and small-scale mining (ASM)

D 4.2.1 – The questionnaires for all OAGS-members filled in and collected .

D 4.2.2 – A Plan for OAGS members on how to strengthen their roles with respect to ASM through training of OAGS staff.



4.2 Questionnaire examples)

4.2 Artisanal and small-scale mining (ASM)

-How many ASM operators (informal/formal or legal/illegal) do you estimate in your country ?

- Are the ASM operators organised in Association or Cooperatives or other legal organisations ?

-Which commodities are typically mined by ASM operators in your country

-Are ASM operators recognised in your Mining Law and Mining Policy

-Do you have a specific department/unit in your Ministry handling issues around ASM operators?









ACTIVITY 4.3.

Mining and the Environment (including post mining)



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GENERAL OBJECTIVE

4.3 Mining and the environment (including post-mining)

- to add capacities of the OAGS members in post-mining issues taking the environmental, socio-economic and legislative issues into account, including also corporate social responsibility (CSR)



4.3. - OBJECTIVES

- 1) Assessment of the existing situation, gap analysis and identification of requirements in technical infrastructure, in the field of post-mining issues
- 2) Assessment of the existing situation in the geochemical-environmental mapping and monitoring in former and active mine areas in Africa
- 3) Definition of cooperation concept for a continent-wide assessment of impact of mining and mineral processing on the environment including evaluation of the environmental legislation, methods of monitoring and environmental thresholds in African countries



TASKS 4.3.

Task 4.3.1. Prepare a questionnaire for the OAGS members to define the current post-mining situation of closed mines and, secondly, the availability of mine closure and monitoring plans for the operating mines and the measures taken. The questionnaire includes verification if financial guarantees are applied as part of the governmental procedures and legislative issues in case of sudden mine closures



DELIVERABLES 4.3

D 4.3.1 Questionnaire prepared and collected

D 4.3.2 Preliminary analysis of the questionnaire and the post-mining practices applied in OAGS countries.



Questionnaire (examples)

- How many historic mining sites (legacy sites) do you estimate there is in your country?
- Do you know if anyone is responsible for monitoring and reclamation of historical sites? If yes, then who?
- Are historic mine sites cause problems? If yes what kinds (references given)?
- Who is responsible for issuing environmental permits before opening a new mine in your country? Does the permit process involve an Environmental Risk Assessment (EIA)?





THANK YOU FOR YOUR ATTENTION!



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