

Simple Tools for Smart Results – Spatial Data in a Digital Age

IAIA15 – Impact Assessment in the Digital Era – Florence, Italy

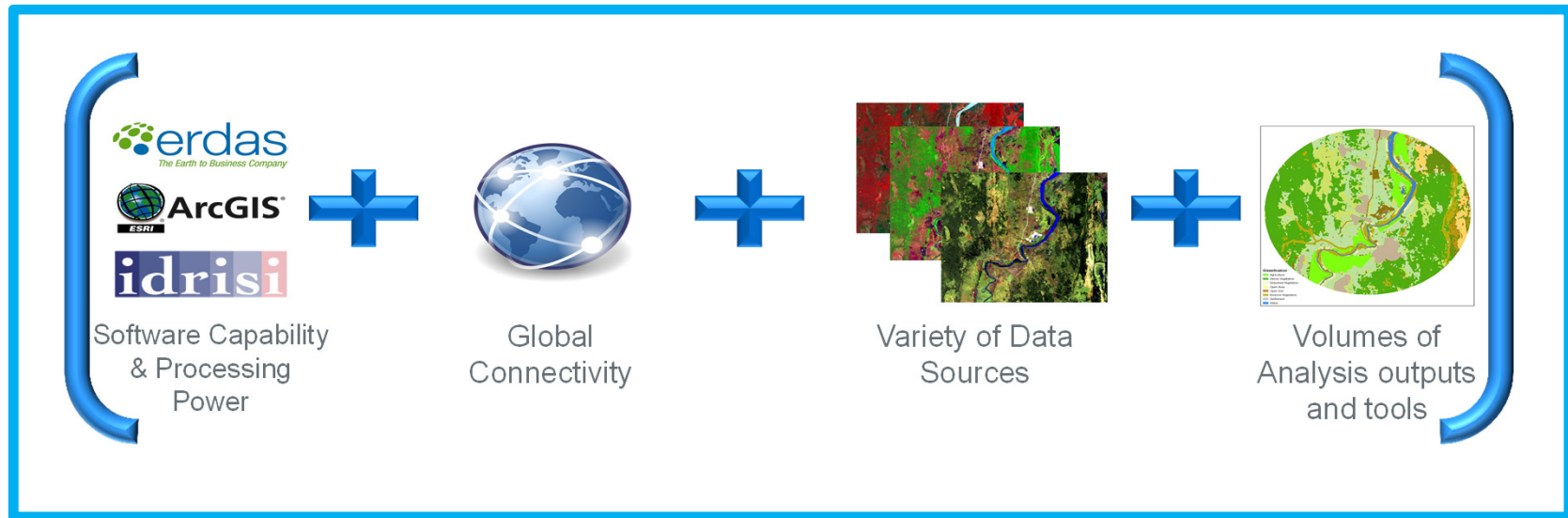
Alan N. Cochran

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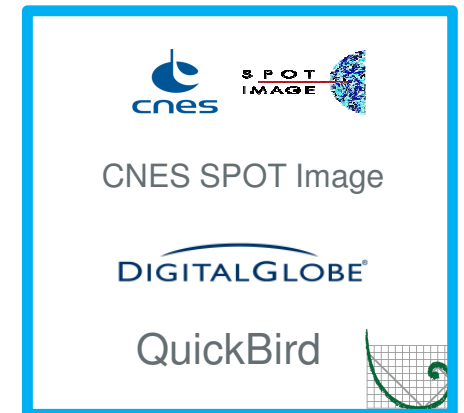
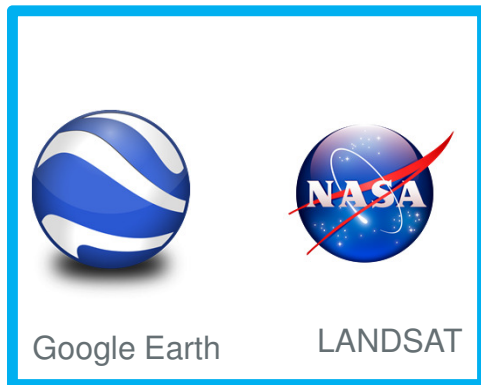
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Spatial data and the digital age



How to navigate this maze of information and possibilities to find the approach that is fit-for-purpose?



Key Actions to get Smart Results from Simple Tools



Determine Study Resolution

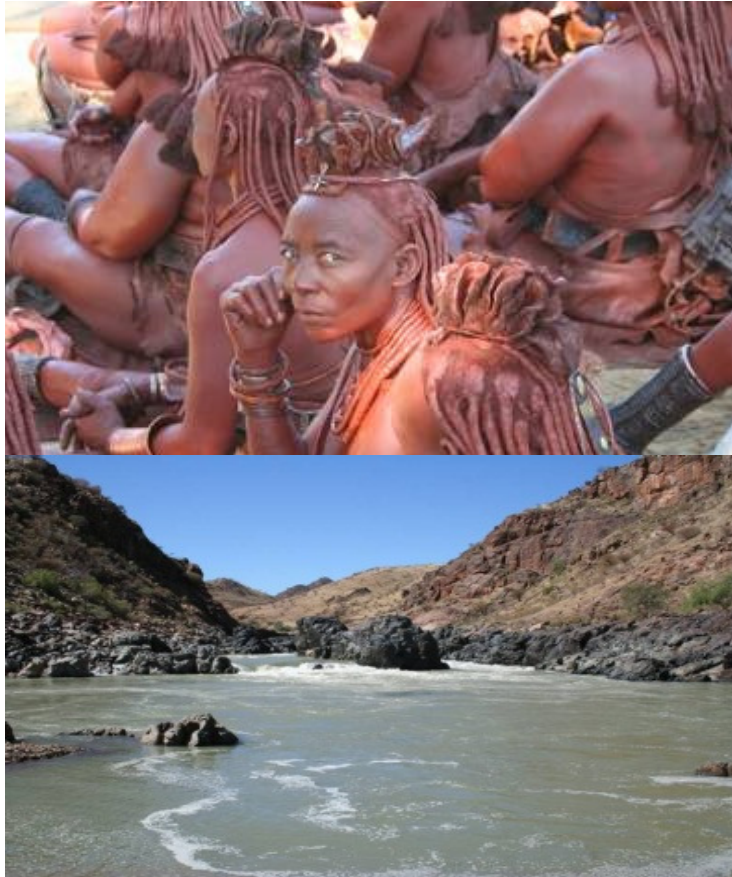


Design the Study



Capture and Integrate Data

Case study: Baynes Hydropower Plant SEA



Client: **PJTC (Project Joint Technical Committee)**

Location: **Namibia & Angola**

Sector: **Power**

- Development of a hydropower scheme on the Lower Cunene River (border between Angola and Namibia);
- Techno-economic study completed;
- ESIA nearing completion;
- Need to consider options for ancillary infrastructure for construction and operation of the project.
- SEA of ancillary infrastructure undertaken to support ESIA

SEA required to provide sufficient information to facilitate informed decision-making with regards to the environmental and social impacts of the overall project

Study Resolution



VS

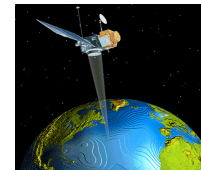


Field Surveys

Desktop



VS



Google Earth

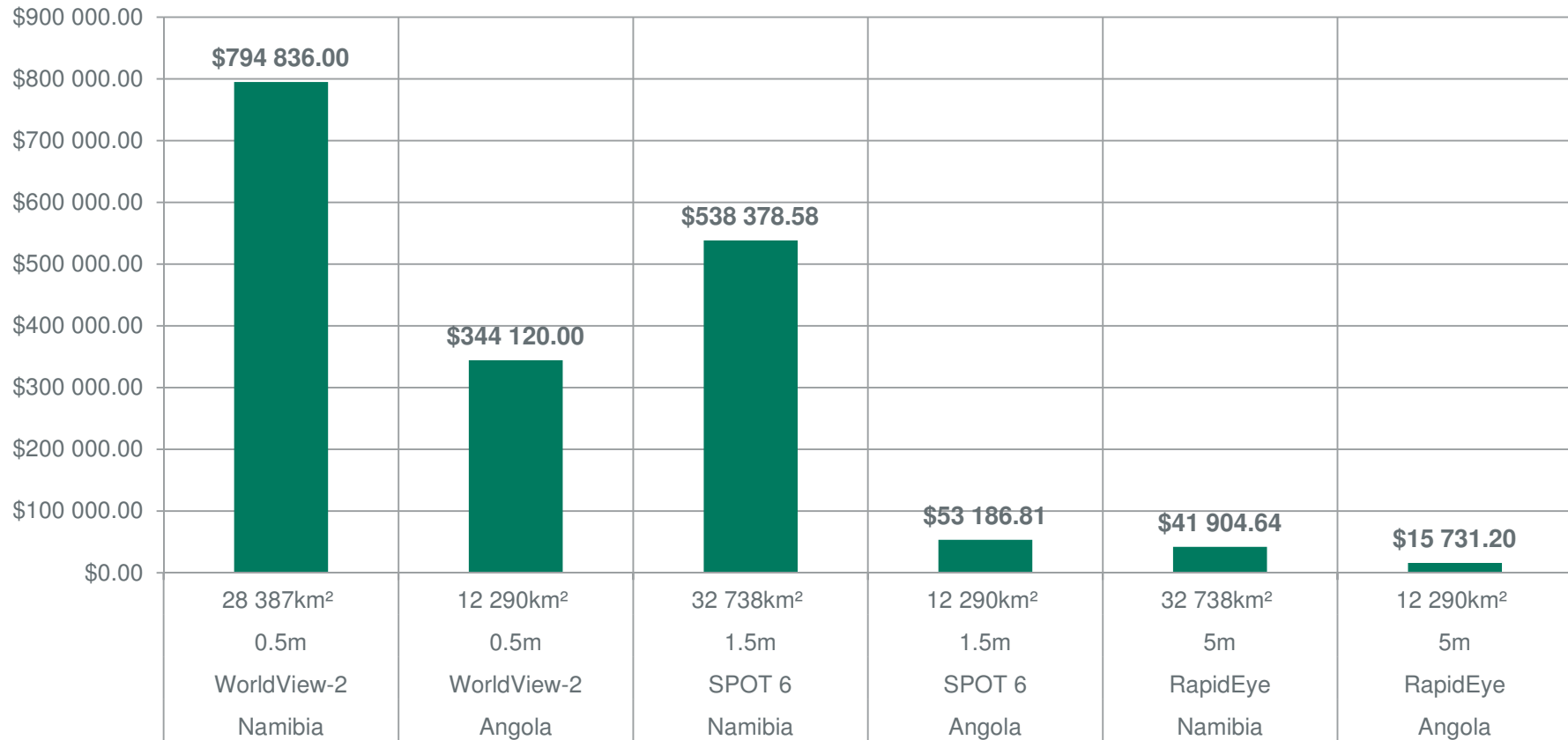
Purchase Satellite
Imagery

- High level understanding of what environmental and social features are potentially occurring and where they are in relation to the ancillary infrastructure (e.g. habitats or settlement types); and
- Assessment of the potential sensitivity of the identified features to the proposed activities associated with the ancillary infrastructure

Study Resolution



Data Cost vs Coverage and Spatial Resolution



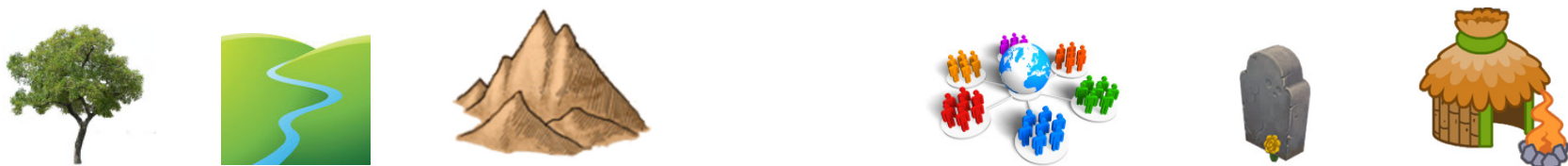
Study Design



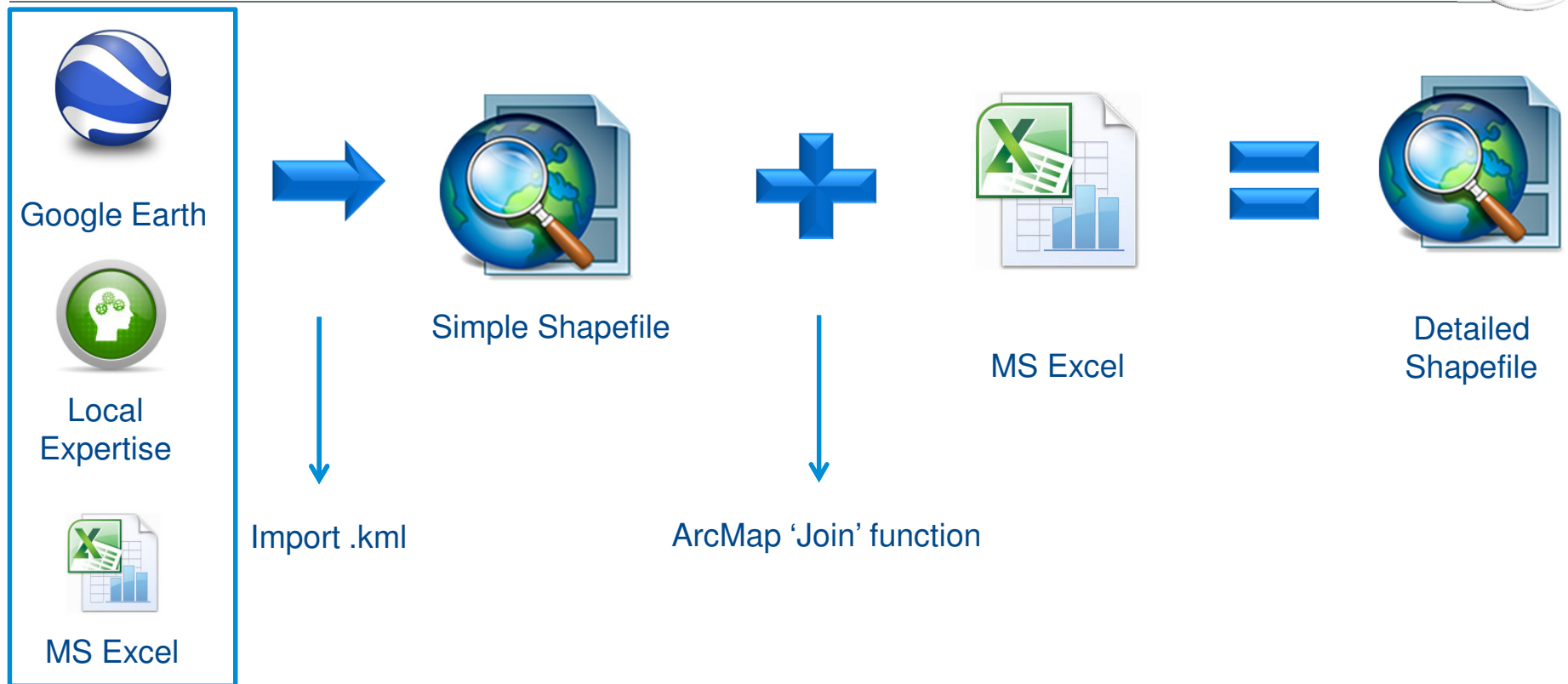
Step 1: Understand the location and nature of the ancillary infrastructure.



Step 2: Identification and characterisation of environmental and social sensitive features.



Data Integration



- Specifically designed a mapping procedure employed by two specialists in each country (a social specialist and a biophysical specialist respectively).
- Designed for the project with the final outputs in mind and combined the use of Google Earth, Microsoft Excel, and finally ArcGIS.

Data Integration



Development of a detailed data capture system to ensure data integrity during transfer from Google Earth into ArcMap

The diagram illustrates the structure of the feature ID **ASPL-A0001**:

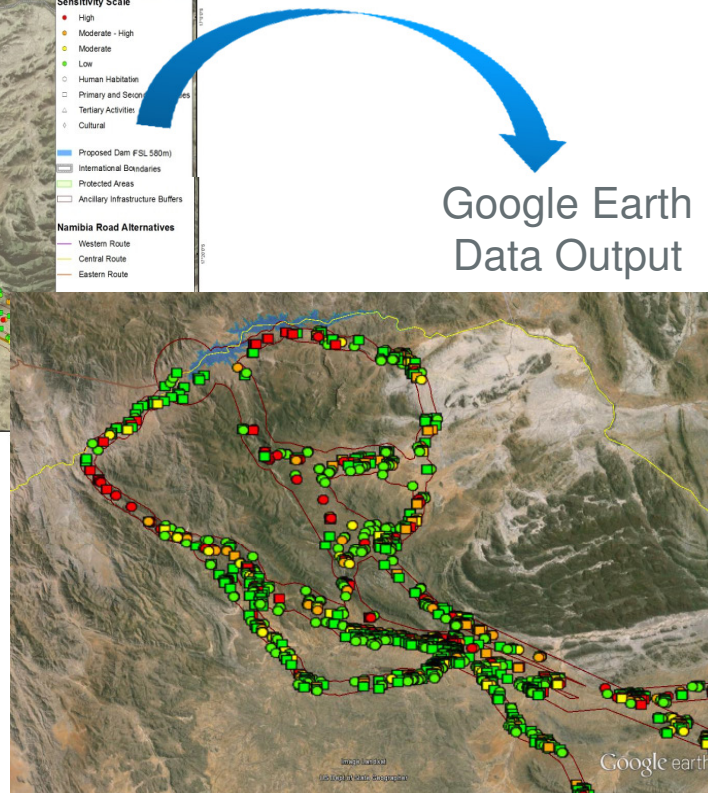
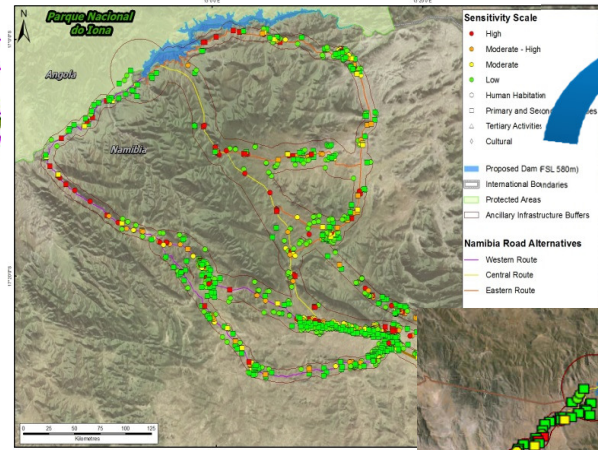
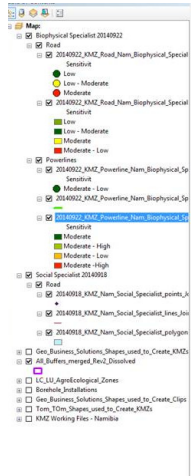
- AS**: Infrastructure Reference (Power Line)
- PL**: Feature Type Reference (Area)
- A**: Country Reference (Angola)
- 00**: Specialist Field (Social)
- 01**: Unique number

The Excel spreadsheet below shows the data for this feature:

1	Feature type	Feature number	Feature Category	Sensitivity Rating	Feature Description	References
2	Area	ASPL-A0001	Inhabited area	Moderate	Small village, nomadic people, would need to be consulted.	Barnes, N. 1994: <i>Indigenous People of Southern Angola</i> , University Press, Luanda.
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Results

Working data in ArcGIS



Conclusions

Key Actions:



Study Resolution



Study Design



Data Integration

Simple Tools:



Local Expertise



Freely available data and commonly used software

Smart Results:



Cost Effective



Time Efficient



Fit for Purpose



Flexible to Change

Acknowledgements

THANK YOU

ERM would also like to thank:

The **IAIA** for the opportunity to present at the conference
Baynes PJTC for allowing use of project information in this paper/presentation.

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