



# The roles of the academic sector in networking and capacity building, research and advocacy on the broad evaluation thematic – the case of CZU-FTA

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CZU/FTA - dean

## Abstract

Evaluation is a multidisciplinary endeavour, almost an art. However, even artists can learn and improve their trade. And thus be trained. Based on science-informed and –supported hard- and software. CZU/FTA offers a diverse number of training programmes with/based on mixed **alpha, beta and gamma** contents. Socio-economic themes subtend more technical subject matters. Moreover, it is a highly performant service provider, and partner for all things M&E !

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to set the scope...

**evaluation** is 'an examination exercise concerning the relevance, effectiveness, efficiency and impact of activities in the light of specified objectives'

nowadays often in combination with

**monitoring**, or 'continuous assessment of programmes based on early detailed information on the progress or delay of the ongoing assessed activities'

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## M&E and FTA

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the faculty

- offers (mainly **English** language-based – outreach ! international ne M&E, and data analysis
- does **research** on M&E
- **publishes** on M&E, and data analysis/management
- is active in research and development programmes/projects in the g elsewhere) both as
  - coordinator/partner in active implementation, and
  - as a service provider in M&E exercises of third-party run programmes
- is involved in **evaluation panels**
- has **unique access to top-notch information sources:**
  - literature: peer-reviewed, impact factor **Web of Science** (and similar sources, like Sc **fellow-scientists** network,...

## WEB OF SCIENCE™

**Producer** Clarivate Analytics (United States)

### Coverage

**Disciplines** Science, social science, arts, humanities (supports 256 disciplines)

**Record depth** Citation indexing, author, topic title, subject keywords, abstract, periodical title, author's address, publication year

**Format coverage** Full text articles, reviews, editorials, chronologies, abstracts, proceedings (journals and book-based ), technical papers

**Temporal coverage** 1900 to present

**No. of records** 79 million (Core Collection)<sup>[1]</sup>  
171 million (Platform)<sup>[1]</sup>

### Links

**Website** <https://clarivate.com/products/web-of-science/>

**Title list(s)** <https://mjl.clarivate.com/home>



Ing.  
(equivalent to MSc)



4 semesters  
120 ECTS



Language  
English



Capacity  
20-25



Annual fee  
6,000 CZK (≈230€)

	I. Semester	II. Semester	III. Semester	IV. Semester
<b>Core courses</b> (50 ECTS)	<b>Institutional and Behavioural Economics</b> Associate Prof. Bavorova (5 ECTS)	<b>Applied Research Methods in Agriculture</b> Associate Prof. Bavorova (5 ECTS)	<b>Econometrics for Agricultural Economics <sup>1)</sup></b> Prof. Cechura (5 ECTS)	
	<b>Agricultural Policy in Developing Countries</b> Associate Prof. Bavorova (5 ECTS)	<b>Global Food Security</b> Prof. Jan Banout (5 ECTS)	<b>Economics of Farming Systems</b> Dr. Verner (5 ECTS)	
	<b>Tropical Products Marketing</b> Dr. Chaloupkova (5 ECTS)		<b>Cooperatives &amp; Farmer Associations</b> Dr. Hejkrlik (5 ECTS)	
	<b>Tropical Crop Production</b> Prof. Lojka (5 ECTS)			
	<b>Animal Production in Tropics</b> Associate Prof. Brandlova (5 ECTS)			
<b>Scientific seminars, diploma thesis, and related courses</b> (35 ECTS)	<b>Diploma Thesis — Assignment</b> Thesis supervisor (2 ECTS)	<b>Diploma Thesis — Research Design</b> Thesis supervisor (3 ECTS)	<b>Diploma Thesis — Data Analysis</b> Thesis supervisor (5 ECTS)	<b>Diploma Thesis — Submission</b> Thesis supervisor (15 ECTS)
	<b>Introduction to Agricultural Research</b> Dr. Hejkrlik (1 ECTS)	<b>Planning and Development of Research Design</b> Dr. Verner (1 ECTS)	<b>Principles of Data Processing and Visualisation</b> Associate Prof. Bavorova (1 ECTS)	<b>Data Presentation and Communication Skills</b> Dr. Chaloupkova (1 ECTS)
	<b>Orientation Meeting for Master Students</b> Dr. Hejkrlik (1 ECTS)			<b>Practical and Research Training ("Internship")</b> Dr. Verner (5 ECTS)

... operators) and  
... ng: both theory and  
... ed

## FTA research into

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- **developing, testing/using and validating new M&E tools**, esp. in the more **technical** fields where new technology allows for different, better,... M&E
  - smartphones allow for easier/faster/more accurate data collection and analysis
  - the 'cloud' allows for more secure storage, but also better sharing and data exploitation
  - triangulation between different kinds of techniques, approaches, .. but also unique multidisciplinary mix of social and technical sciences

example: FAO's Action Against Desertification (AAD) project



**ACTION AGAINST DESERTIFICATION**

**Large-scale restoration for small-scale farming is crucial to stop land degradation**



EXPANDING AFRICA'S **GREAT GREEN WALL**



## Improvements on land preparation

Manual

(100 people 1 ha/day)

hard labour and expensive



Advanced technology

(15-20 ha/day)

less taxing and twice cheaper !





# Large-scale water harvesting and increase of soil permeability

(1000 litres of rainwater harvest/year per bund)



## TRANSFORMATIVE INVESTMENT IN LARGER-SCALE RESTORATION



**Initial land preparation, Burkina Faso**



**2-year result of restoration, Burkina Faso**

## MONITORING AND VALIDATION: BACKGROUND

- as part of the AAD initiative, FAO has implemented a procedure to monitor and **validate 'true' surface area** of prepared plots (against contractor claims) using **remote sensing**
- optical remote sensing can detect scars left by the use of the plough machine by using **very high resolution images** (Fig.1).
- **Google Earth** provides **free-of-charge optical images** (but some time not recent enough) – possibility to build time series

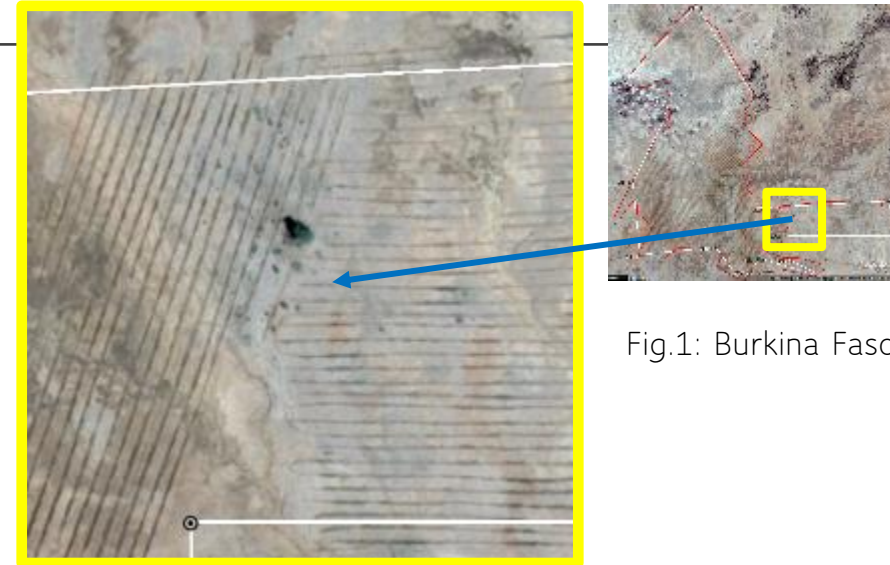
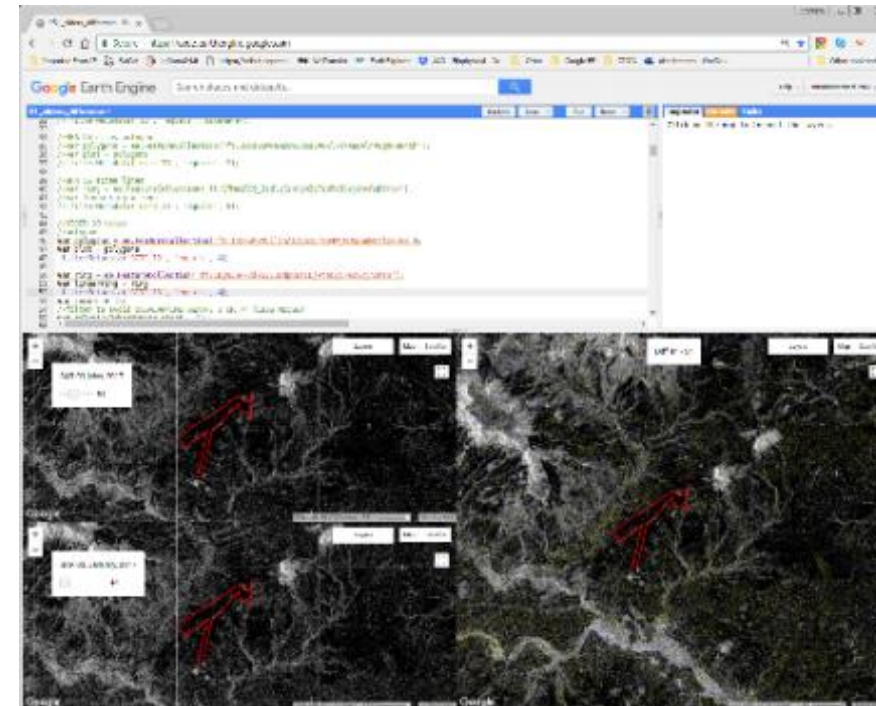
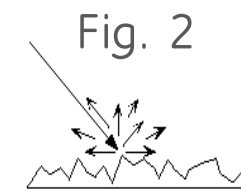
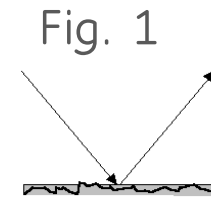


Fig.1: Burkina Faso



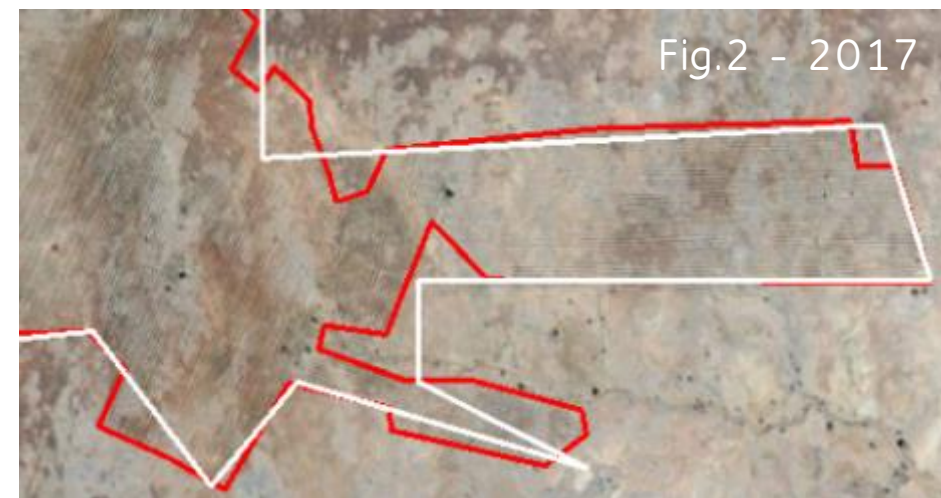
- principle: detection of changes in surface roughness due to disturbance (ploughing) by the radar sensor (Fig 1: flat; Fig 2: rough)
- freely available **radar** images from the ESA's Sentinel 1 mission
- use of Google cloud and computing platform to perform a time series analysis and detect changes



## BOUNDARY RECTIFICATION

if high-resolution images (Fig. 1 and 2) are available, or through radar images before and after land preparation, GPS-based boundaries can be refined and acreage recalculated

- GPS boundary (Fig.2, white line)
- rectified boundary (Fig.2, red line)



## RESULTS OF ANALYSES OF THE 55 SITES

- 33 sites (60%, 1 858 ha) do not require field verification because the areas detected more or less match the areas claimed (Fig.1)
- 12 sites (22%, 1 085 ha) require field verification as the areas detected are substantially lower than the areas claimed (Fig.2)
- 10 sites (18%, 416 ha) could not be verified through Remote Sensing and required field validation/checking

Fig.1: Village Yattakou

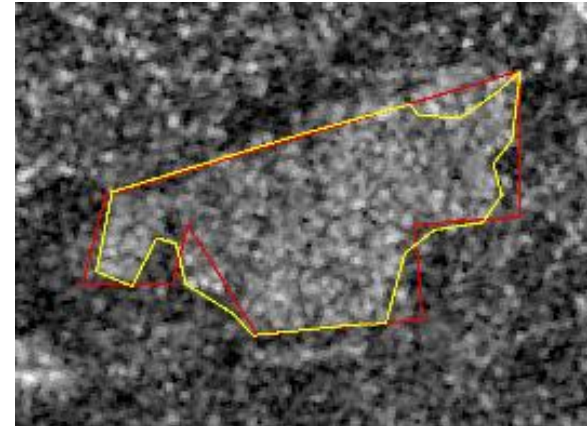
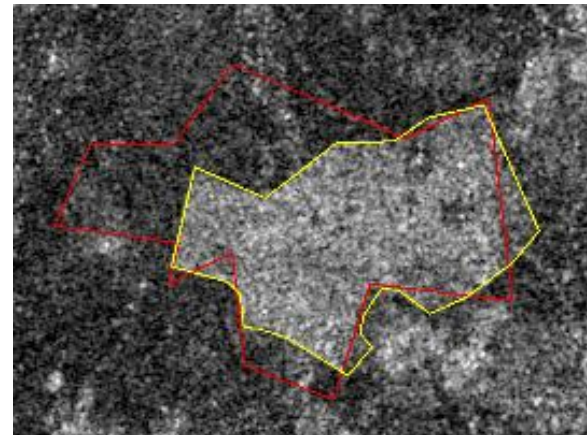


Fig.2: Village Badourlébé



# NIGER: 10 INTERVENTION SITES ANALYZED

Id	village	site	Claimed area (ha)	GPS area (ha)
1	Petelkole	site 1	127.97	141.45
2	Handaga/Zindigori	site 1	27.00	24.46
3	Doumba	site 1	63.76	98.23
4	Doumba	site 2	90.79	128.66
5	Doumba	site 3	81.88	85.86
6	Arboudjie	site 1	113.31	90.28
7	Arboudjie	site 2	61.05	86.86
8	Arboudjie	site 3	130.95	146.37
9	Arboudje (sassa)	site 4	44.98	48.52
10	Badjirga	site 1	130.95	170.60
			<b>872.64</b>	<b>1021.29</b>



# RESULTS OF ANALYSES OF THE 10 SITES

Out of **1 021 ha** of degraded areas ploughed with the Delfino (July 2017 - January 2018):

- 8 sites (**855 ha, 84%**) do not require field verification because the areas detected with radar data match the areas claimed through the GPS points
- 2 sites (**166 ha, 16%**) could not be verified through Remote Sensing and need field validation/checking

Id	village	site	GPS area (ha)	Corrected area (ha)	Date of SAR anomaly
1	Petelkole	site 1	141.45		NOT DETECTED
2	Handaga/ Zindigori	site 1	24.46		NOT DETECTED
3	Doumba	site 1	98.23	306.43	<b>18-Nov-17</b>
4	Doumba	site 2	128.66		
5	Doumba	site 3	85.86		<b>30-Nov-17</b>
6	Arboudjie	site 1	90.28	122.09	<b>12-Dec-17</b>
7	Arboudjie	site 2	86.86	88.79	<b>24-Dec-17</b>
8	Arboudjie	site 3	146.37	161.54	<b>24-Dec-17</b>
9	Arboudje	site 4	48.52	52.56	<b>24-Dec-17</b>
10	Badjirga	site 1	170.6	175.65	<b>17-Jan-18</b>
<b>DETECTED</b>			<b>855.38</b>	<b>907.06</b>	
<b>NOT DETECTED</b>			<b>165.91</b>	<b>0</b>	
			<b>1021.29</b>	<b>907.06</b>	



# SENEGAL: 1 INTERVENTION SITE

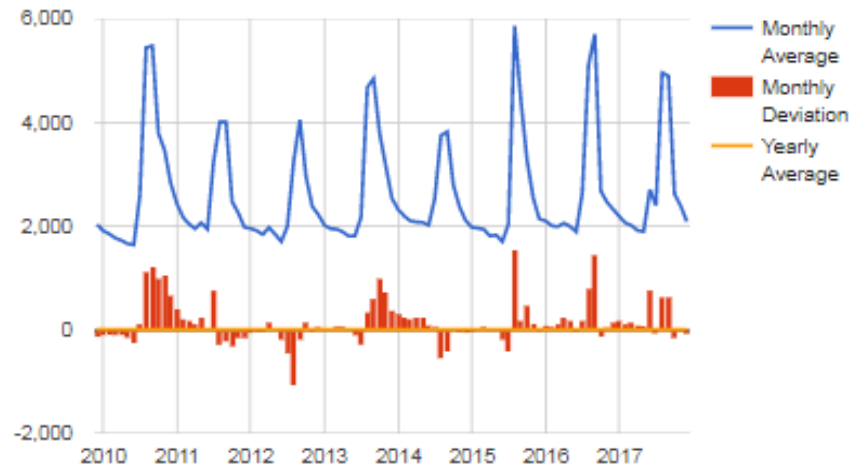
Koyli Alpha plot, 219.54 ha



## Monitoring of intervention impact through Remote Sensing

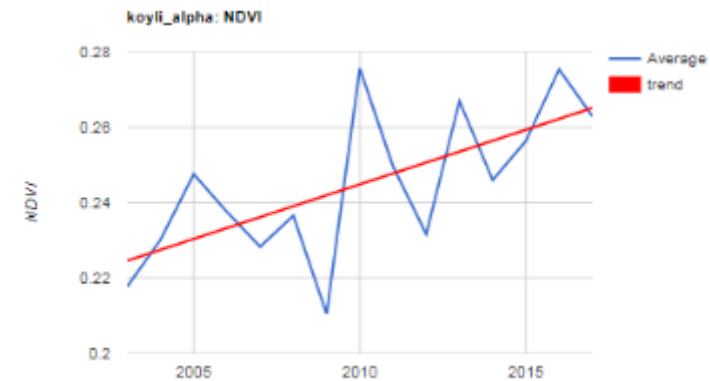
*Time Series analysis of Normalized Difference Vegetation Index (NDVI)*

Monthly NDVI and deviation from average, 2010-2018



NDVI mostly above average

Annual trend based on 2000-2018 time series



Source: MODIS 16 day composites, 250m (6.25 ha/pixel), 2000-2018

## CONCLUSION

AAD is committed to **verify** restoration activities through **geo-location** and remote sensing imagery of all project intervention areas;

radar technology works perfectly in Sahelian environments (relatively flat) and provides reliable validations to restoration sites

AAD technical and **training** support will be provided to partners and countries to keep track of progress by using its methodology





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# MONITORING OF VEGETATION GROWTH IN RESTORATION SITES BY USING REMOTE SENSING AND **NDVI** (NORMALIZED DIFFERENCE VEGETATION INDEX)

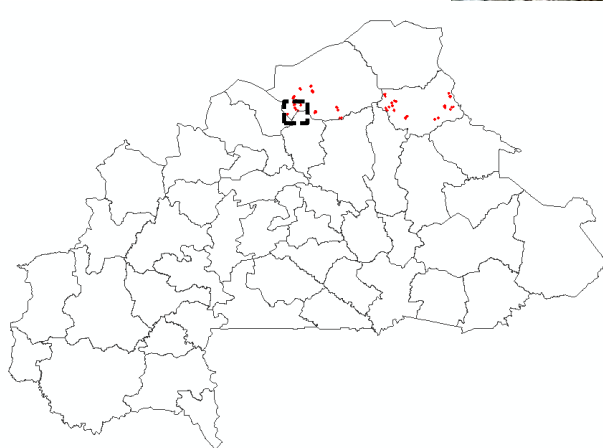
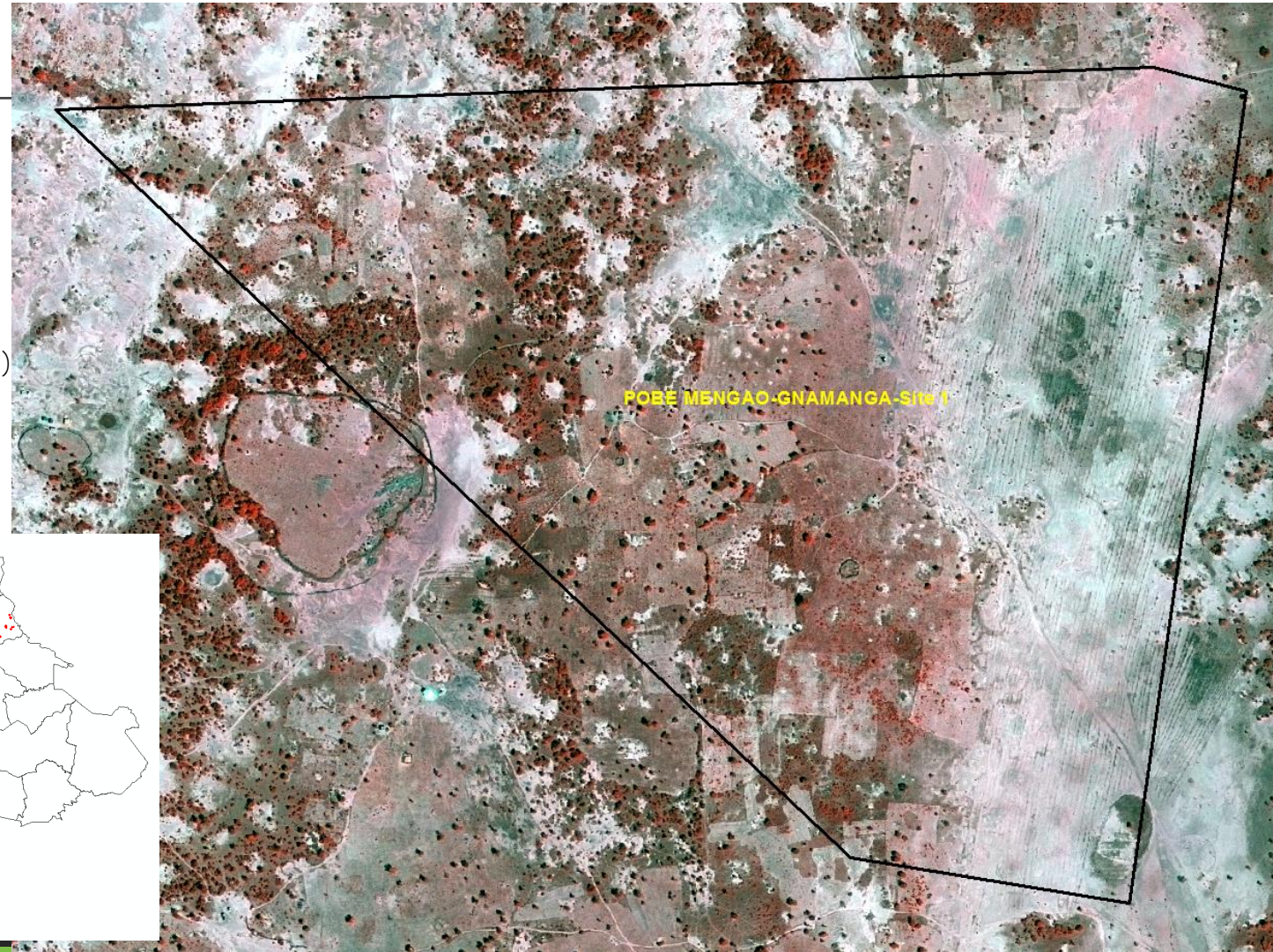




## Burkina Faso

POBE MANGAO  
Gnamanga  
AAD Site 1

Satellite Imagery  
False colour composite (4/3/2)  
Pleiades 50 cm (AIRBUS)  
23 November 2018

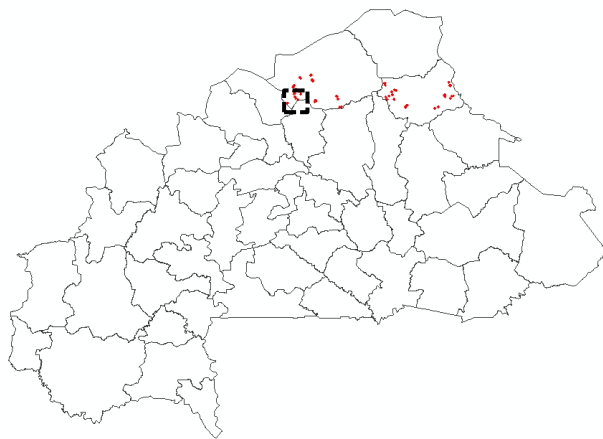
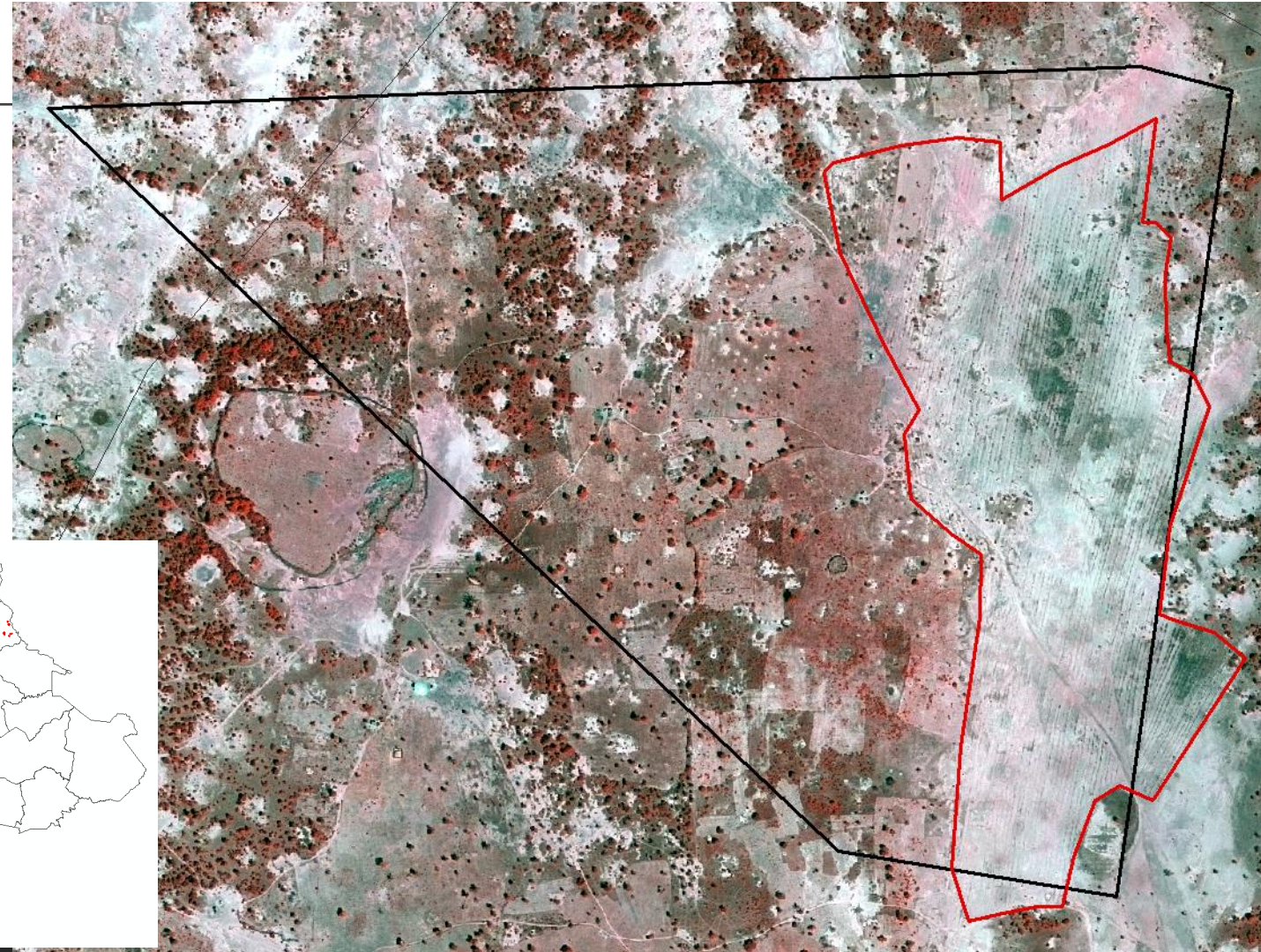


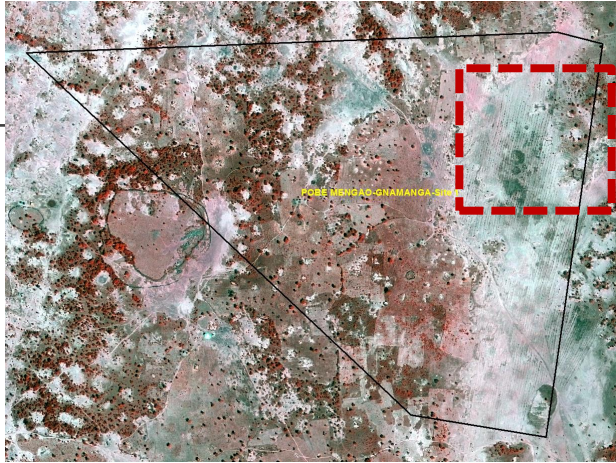


## Burkina Faso

POBE MANGAO  
Gnamanga  
AAD Site 1

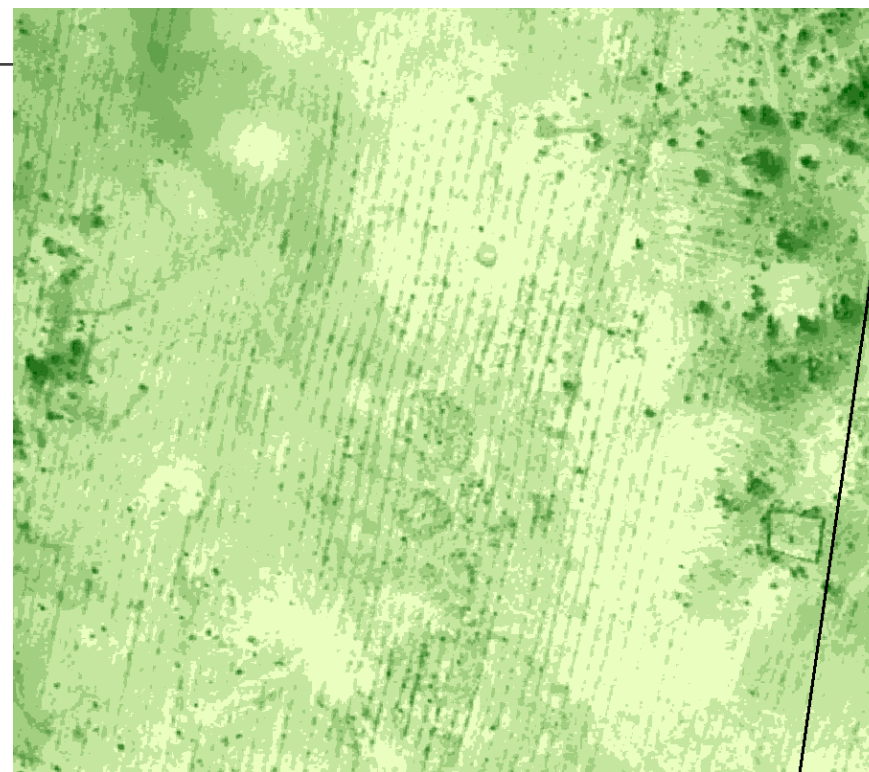
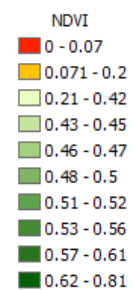
Parcel total: 76.5 ha  
Area planted: 24.5 ha







NDVI  
23 November  
2018



Values > 0.2 indicate  
presence of vegetation  
(from grass to trees)



## FTA research

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- also in the social sciences, **new data analysis methods** where **'big-data'** databases have become available, allow for **meta-studies** (following the development and availability of newer/more-performant hard- and software) through new algorithms, new programmes,...
- new software
  - allows to evidence cases of plagiarism, and
  - helps to denounce predatory journals, ...

### BIG DATA



### Dietary species richness as a measure of food biodiversity and nutritional quality of diets Contribution analysis: Coming of age?

John Mayne

First Published July 8, 2012 | Research Article |



<https://doi.org/10.1177/1356389012451663>

[Article information](#) ▾



### Abstract

In this introductory article, a brief history and introduction to contribution analysis is provided to lay the stage for the articles that follow. At the heart of contribution analysis is the aim to be able to make credible causal claims about the contribution an intervention is making to observed results. The key role that theories of change play is noted, and what a useful theory of change ought to contain is discussed. The article then makes a link between the philosophical discussions on causality and contribution analysis through a discussion of contributory causes. It is argued that such causes, which on their own are neither necessary nor sufficient, represent the kind of contribution role that many interventions play: where there are a number of other influencing events and conditions at work in addition to the intervention of interest. Contribution analysis is an approach to confirming that an intervention is a contributory cause.



## FTA publications

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- publication output = part and parcel of our activities, and one of the 3 pillars of academia !
- impact factor/Q1/2-level articles, book(chapter)s, **reports**, conference papers,...

Amoako Agyemanga, S., Bavorová, M. & Ratinger, R. Production Subsidy and the Adoption of Sustainable Agricultural Practices: The Case of Ghana. *Ecological Economics*. In review.

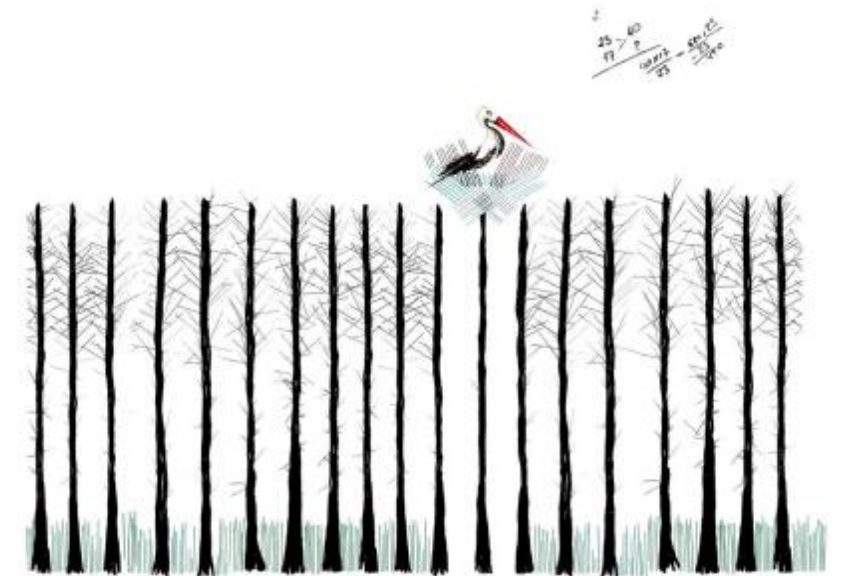
Amoako Agyemanga, S., Ratinger, S. & Bavorová, M. The Impact of Increased Agricultural Input Subsidy on Productivity and Food Security: The Case of Ghana. *The European Journal of Development Research*, accepted for publication.

Adesida, I. E., Bavorova, M., Madaki, M.Y. & Nkomoki, W. Why Smallholder Farmers Do Not Use Subsidized Inputs ? Electronic Wallet Adoption in Nigeria. *The European Journal of Development Research*. In review.

Adesida, I.E., Bavorova, M., Madaki, M.Y. & Nkomoki, W. Effects of Agricultural Programmes and Land Ownership on the Adoption of Sustainable Agricultural Practices in Nigeria. *The European Journal of Development Research*, in review.

## Survey Design

Edited by  
Miroslava Bavorova



## FTA service to society, through

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- service provision: **M&E** of R&D projects and **baseline/conceptual framework provision**
  - academia is (or should be...): objective, impartial, rational,... and knows where to draw information from, should know about the latest M&E techniques, and – through research – is often at the forefront of new methodology development
  - academia are themselves the focus of evaluations (teaching performance, research output,...) but also themselves evaluate
    - peers, and like-organized institutions, through visitation commissions, accreditation exercises, and
    - peer-review of articles, project proposals,..;
- for greater accountability, for the purpose of learning, and furthering the specific thematic fields' depth and content,
- academia are part of HR-commissions, mentoring colleagues
- for baseline provision, FTA can help defining criteria, collect all necessary, develop evaluation and monitoring matrices
- all this is grounded in both theoretical and empirical principles and techniques

## FTA service to society, through

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- **policy** (and practice) development
- thematic **review of literature**
- assistance with ‘right’ **choice and use** of specific/specialized (software) **analysis** techniques
- **complement expert M&E service providers** (who often have limitation in accessing the right info sources, and analysis techniques)

Assessing societal impacts of research is more difficult than assessing advances in knowledge. Methods to evaluate research impact on policy processes and outcomes are especially underdeveloped, and are needed to optimize the influence of research on policy for addressing complex issues such as chronic diseases. Contribution analysis (CA), a theory-based approach to evaluation, holds promise under these conditions of complexity. Yet applications of CA for

## FTA service to society, through

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- service provision: **M&E** of R&D projects
- more specifically: complementing the gap/filling the blind spot when it comes to M&E of R&D, university and research centre curricula,... as this is a very specific 'market' ...
- *and we love (!!!) to bring in the outsider view...*

### Research for AGRI Committee - Young farmers - Policy implementation after the 2013 CAP reform 16-10-2017

This report provides information regarding the state of implementation of the current CAP young farmers' mechanism. The different implementation styles of the Members States are described and the currently implemented policy tools are evaluated. Based on the secondary analysis and case studies, several policy recommendations are formulated, aimed at improving the existing support scheme and assisting young farmers to deal with the major barriers to entering agriculture.

Studie } pdf  

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Druh publikace Studie Oblast Rozpočet Předběžné posuzování dopadu

Hodnocení práva a politiky v praxi Zemědělství a rozvoj venkova

**Klíčové slovo** zemědělská půda členský stát EU finanční pomoc reforma společné zemědělské politiky

program EU společná zemědělská politika rozvoj venkova mladý zemědělec zemědělská pracovní síla

## FTA service to society, through

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- service provision: **M&E** of R&D projects
- FTA partners with (inter)national and bilateral (non-)governmental organisations, and is partner in
- many international R&D projects...



