

WHEN SPACE MEETS AGRICULTURE

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BAVARIA / D

How the Use of Space Technologies Supports Innovation in Agriculture, Forestry and Rural Development (some transparencies provided by VISTA-Geo & talkingfields.de)

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bavAIRia e.V. - Bavarian Cluster Aerospace



in collaboration with



and the support of





REGION BAVARIA

- Largest state in D
 - 12,7 Mio. inhabitants, 180 inhab./km²
 - Ca. 85 % rural areas, 36,3 % forest
- > Agriculture & forestry are important economic, environmental touristic factors.



Federal
Republic
of
Germany

- Bavaria



250 km

© TUBS Wikipedia



AGRI & Forestry Report Bavaria 2016 – (excerpt from part «policy recommendations»)

- **Acceptance of agriculture & policies by society** 109.200 farms, 30 ha av.
- **Digitalisation: R&D in agro-informatics targeted at farms**
- **Doubling of organic farming until 2020** 10 % eco-farms/4 % eco-food
- **Sustain. & resilient agri & forest industry** environ., resource , clim.ch.
 - **Small Alpine Region in South of Bavaria** -> Mt. Zugspitze 2967 m



Bavaria's Space Technology-Related Needs in AGRI & Forestry

- **Smart modelling of all of Bavaria**

 - 3D, infrastructures, cities, transport, soil, sealing, water, climate/erosion,... -> timelines

- **Yield forecasts**

 - Market influence

 - Influence by weather & climate change

- **Support of farmers**

 - **Open information systems**

 - Weather<->photosynthesis<->soil<->plant types<->fertilisers

 - **Early warning systems**

 - Natural disasters



Two examples «Space meeting Agriculture»

- **Service to farmers** (by private company consortium)
--> **Talking fields**
- **Service to state forest administration** (by local regional forest agency)
--> **Forest damage detection**



- Service to farmers



Agritechnica (World Leading Farm Machinery Fair)

Gold Medal 2015

Nutrient management system (P, N, ..., eco or conventional)



An aerial multispectral satellite image of agricultural fields. The image shows various shades of green, brown, and purple, representing different vegetation indices. Several fields are outlined in white, and some are highlighted in a bright yellow-green color. The overall scene is a complex mosaic of agricultural plots.

talkingfields - from Image to Information

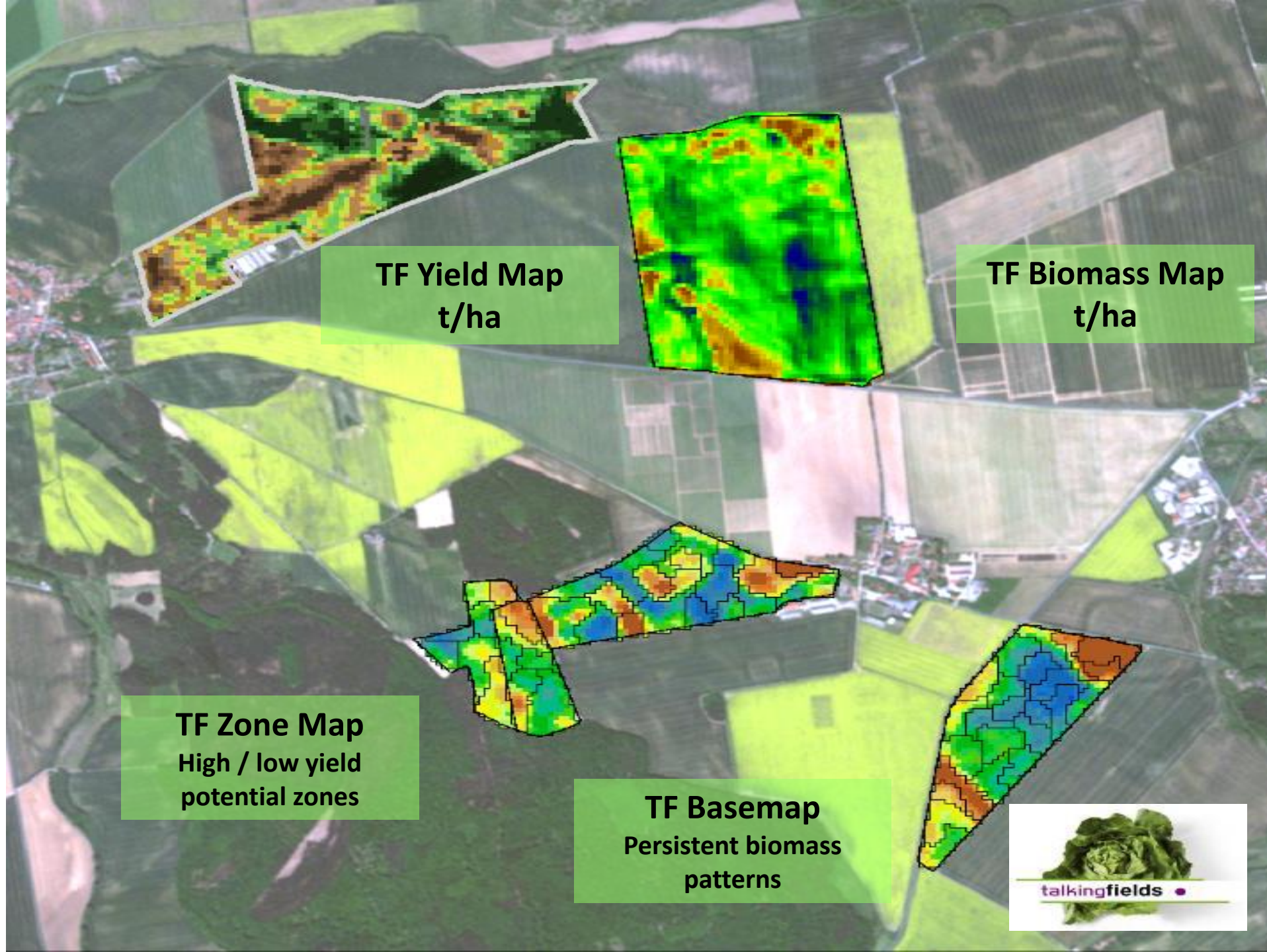
www.talkingfields.de

RapidEye

5 m resolution,
multispectral,
incl. NIR

RapidEye





TF Yield Map
t/ha

TF Biomass Map
t/ha

TF Zone Map
High / low yield
potential zones

TF Basemap
Persistent biomass
patterns



talkingfields services offered German-wide through FarmFacts

NEXT Farming

Smart Farming

NEXT Software

Über NEXT Farming

Service

Kostenlos registrieren

Login



NEXT Farming: Effizientes Farm-Process-Management



Smart Farming



NEXT Software



NEXT Farming

Was bedeutet Smart Farming?

Bleiben Sie immer auf dem Laufenden

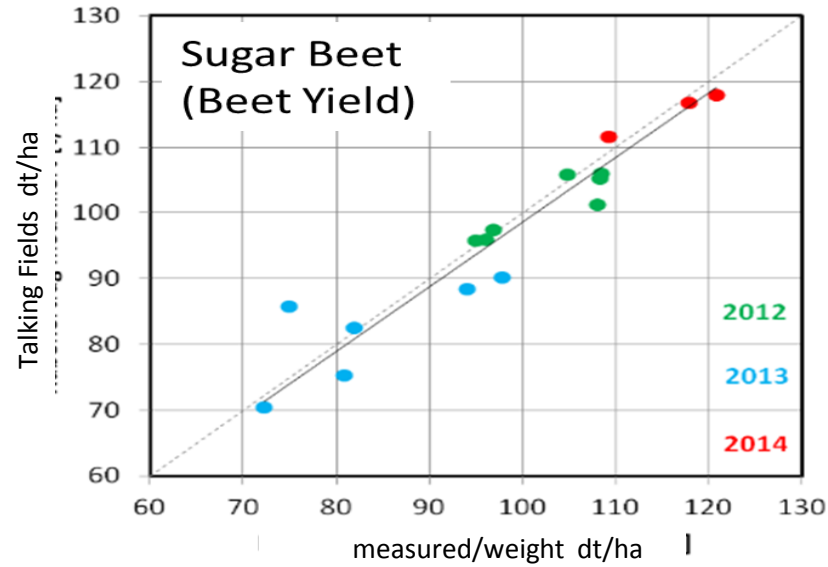
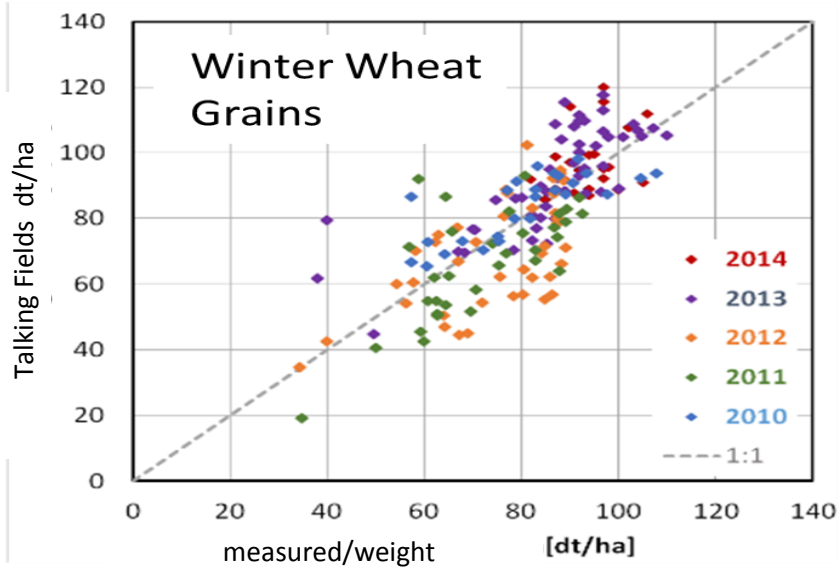
Welche Funktionen bietet die Software NEXT Farming?

Jetzt abonnieren

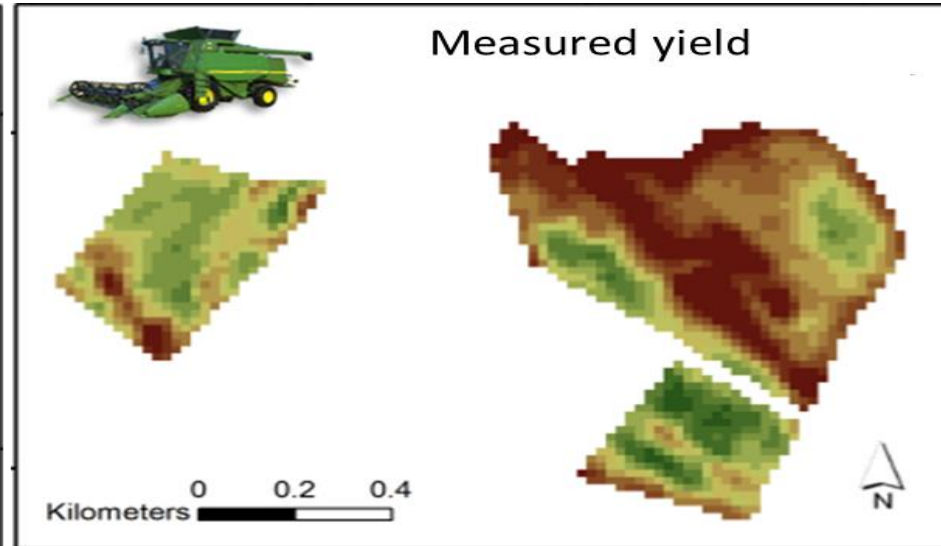
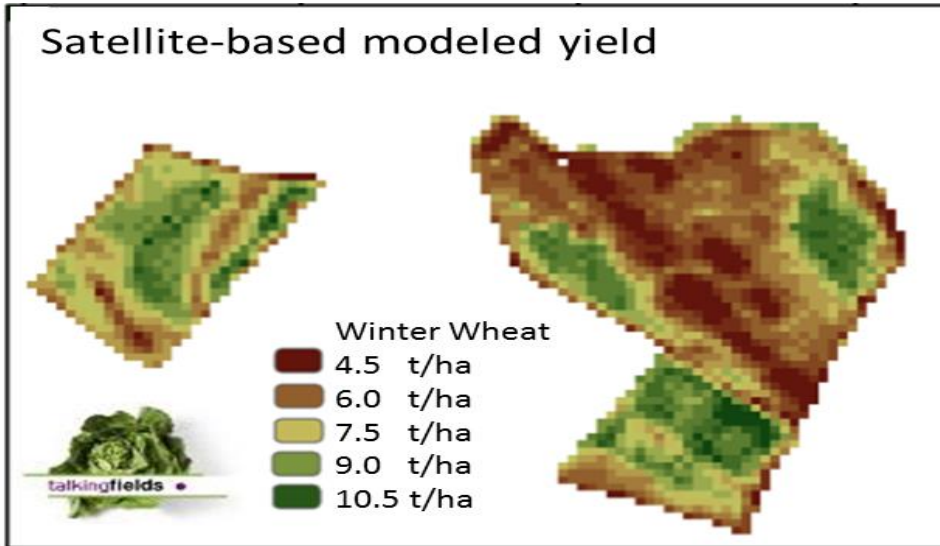
Was zeichnet die NEXT Farming Software aus?



How accurate can we model yield with EO on field and farm level?



Not only field averages (left) also within-field heterogeneity (bottom) can be modelled with very high accuracy.

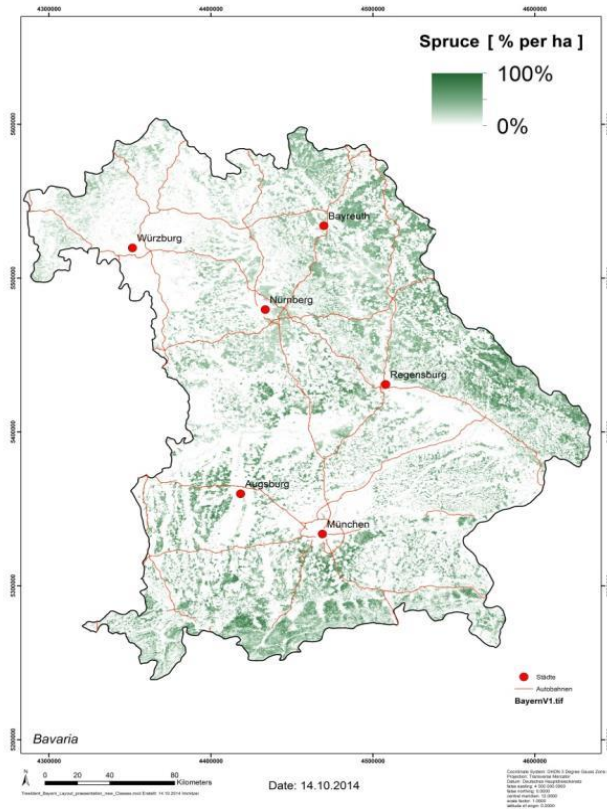




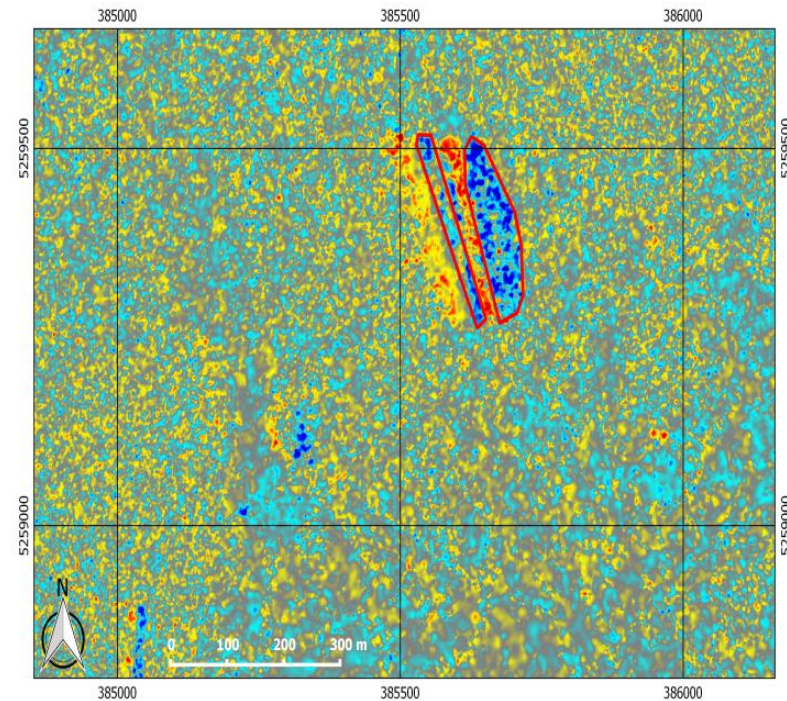
- **Service to state forest administration**

FOREST MONITORING

-> The Bavarian State Institute of Forestry (LWF) supports the Bavarian State Ministry of Agriculture and Forestry with applied research & continuous monitoring



Spruce in Bavaria



Detection of forest damage by storms (2 ha) from satellite radar images



Message

«Agriculture in Bavaria is technology-affine»

«Bavaria has to serve the small farms»



MANY THANKS!



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