

A satellite image of Earth, showing a portion of the Western Hemisphere. The landmasses are depicted in shades of brown and tan, while the oceans are a deep blue. The image is used as a background for the title slide.

Responsible data for Agriculture and Nutrition: Promises and challenges

CFS Rome
July 2021



Reality/Challenges:

- Average Agrican farmer age: 58 years
- 90% African farms: <2 hectares
- 80% <1 hectare
- <20% of African production sold
- Demographics
- Climate change
- Digital fracture // Adapted technology



Open Data- Promises/impact:

- **Geodata**
- **Weather**
- **Markets**
- **Infestations**
- **Diseases**
- **Equipment**
- **Socio-economics**

Impact:

- **Agriculture optimization**
- **Production**
- **Costs**
- **Profits**
- **Improved nutrition**
- **Disaster prevention**
- **Quality of life**



**Reality check:
Ask Bob**



RespondentId	StartDate	CompletedDate	LanguageCode	Question1	Question2	Question3	Question4	Question5	Question6	Question7	
27357	2006.11.27-15:6	2006.11.27-15:7	en	Denmark	Financial Services	6--12 months	26-100	4,4,2	"cvbcbv"	2,3,3,1,0p	
27359	2006.11.27-15:7	2006.11.27-15:8	en	Italy	Hardware Vendor	1--2 years	26-100	3,5,4,,1,3,3,4	Opinio	0,0,0,0,1,	
27360	2006.11.27-15:8	2006.11.27-15:8	en	Lithuania	Retail	6--12 months	6-10	4,1,4	"this is a random other text"	2	
27361	2006.11.27-15:8	2006.11.27-15:8	en	Panama	Retail	6--12 months	6-10	4,1,4	"this is a random other text"	2,2,	
27362	2006.11.27-15:8	2006.11.27-15:8	en	Djibouti	Manufacturing	6+ years	101-250	0,4,0	"another random text"	5,5,5	
27363	2006.11.27-15:8	2006.11.27-15:8	en	Tanzania	Retail	1--2 years	1001-5000	1,1,1	"123456"	2,2,2,2,Opinio	0,1,1
27364	2006.11.27-15:8	2006.11.27-15:8	en	Vanuatu	Other	1--2 years	1001-5000	6,5,6	"123456"	6,6,6,6,Opinio	0,0,1,1
27365	2006.11.27-15:8	2006.11.27-15:8	en	Angola	Government	1--2 years	11-25	4,2,4	"123456"	3,3,3,3,Opinio	0,0,1,1
27366	2006.11.27-15:8	2006.11.27-15:8	en	Panama	Manufacturing	<6 months	1-5	1,4,1	"hey"	5,5,5,5,Opinio	0,1,0,0,0,1
27367	2006.11.27-15:8	2006.11.27-15:8	en	Norway	Education	2--5 years	5001-10000	6,0,6	"f6{[]]+&æ' '*-/+\\"	1,1,1	
27368	2006.11.27-15:8	2006.11.27-15:8	en	Bermuda	Software Vendor	1--2 years	11-25	0,2,0	"123456"	3,3,3,3,Opinio	1
27369	2006.11.27-15:8	2006.11.27-15:8	en	Panama	Transportation	1--2 years	11-25	5,4,5	"123456"	5,5,5,5,Opinio	0,1
27370	2006.11.27-15:8	2006.11.27-15:8	en	Maldives	Other	6+ years	10001 or more	2,5,2	"another random text"	6,6,6,6	
27371	2006.11.27-15:8	2006.11.27-15:8	en	Kyrgyzstan	Medical	2--5 years	26-100	3,5,3	"f6{[]]+&æ' '*-/+\\"	6,6,6,6	
27372	2006.11.27-15:8	2006.11.27-15:8	en	Antigua and Barbuda	Government	6--12 months	501-1000	6,2,6	"this is a ra		
27373	2006.11.27-15:8	2006.11.27-15:8	en	Belarus	Financial Services	6+ years	10001 or more	2,1,2	"another random t		
27374	2006.11.27-15:8	2006.11.27-15:8	en	Vatican City	Non-profit	1--2 years	11-25	0,0,0	"123456"	1,1,1,1,Network	
27375	2006.11.27-15:8	2006.11.27-15:8	en	Georgia	Financial Services	6+ years	10001 or more	6,1,6	"another random t		
27376	2006.11.27-15:8	2006.11.27-15:8	en	Tokelau	Transportation	1--2 years	11-25	2,4,2	"123456"	5,5,5,5,Network-P	
27377	2006.11.27-15:8	2006.11.27-15:8	en	Chad	Software Vendor	<6 months	1-5	6,2,6	"hey"	3,3,3,3,Network Probe	1,1,
27378	2006.11.27-15:8	2006.11.27-15:8	en	Turkey	Software Vendor	6--12 months	501-1000	1,2,1	"this is a random oth		
27379	2006.11.27-15:8	2006.11.27-15:8	en	East Timor	Transportation	<6 months	1-5	0,4,0	"hey"	5,5,5,5,Opinio	1,1,0,
27380	2006.11.27-15:8	2006.11.27-15:8	en	Nicaragua	Medical	6--12 months	6-10	5,5,5	"this is a random other text"		
27381	2006.11.27-15:8	2006.11.27-15:8	en	Equatorial Guinea	Software Vendor	6+ years	101-250	6,2,6	"another random"		
27382	2006.11.27-15:8	2006.11.27-15:8	en	Zambia	Retail	<6 months	251-500	1,1,1	"hey"	2,2,2,2,Surveyor	0,1,0,0,0,0,
27383	2006.11.27-15:8	2006.11.27-15:8	en	French Southern and Antarctic Lands	Retail	1--2 years	1001-5000	2,1,2	"1		
27384	2006.11.27-15:8	2006.11.27-15:8	en	Guinea-Bissau	Hardware Vendor	2--5 years	26-100	6,3,6	"f6{[]]+&æ' '*-/+\\"	6,6,6,6,0	
27385	2006.11.27-15:8	2006.11.27-15:8	en	Viet Nam	Medical	2--5 years	26-100	4,5,4	"f6{[]]+&æ' '*-/+\\"	6,6,6,6,0	
27386	2006.11.27-15:8	2006.11.27-15:8	en	Reunion	Medical	1--2 years	1001-5000	2,5,2	"123456"	6,6,6,6,Opinio	1,1,1
27387	2006.11.27-15:8	2006.11.27-15:8	en	Puerto Rico	Non-profit	<6 months	1-5	0,0,0	"hey"	1,1,1,1,Opinio	1,1,1,1,0
27388	2006.11.27-15:8	2006.11.27-15:8	en	East Timor	Financial Services	6--12 months	6-10	1,1,1	"this is a random"		

Two basic ethical principles: Involvement + risk management

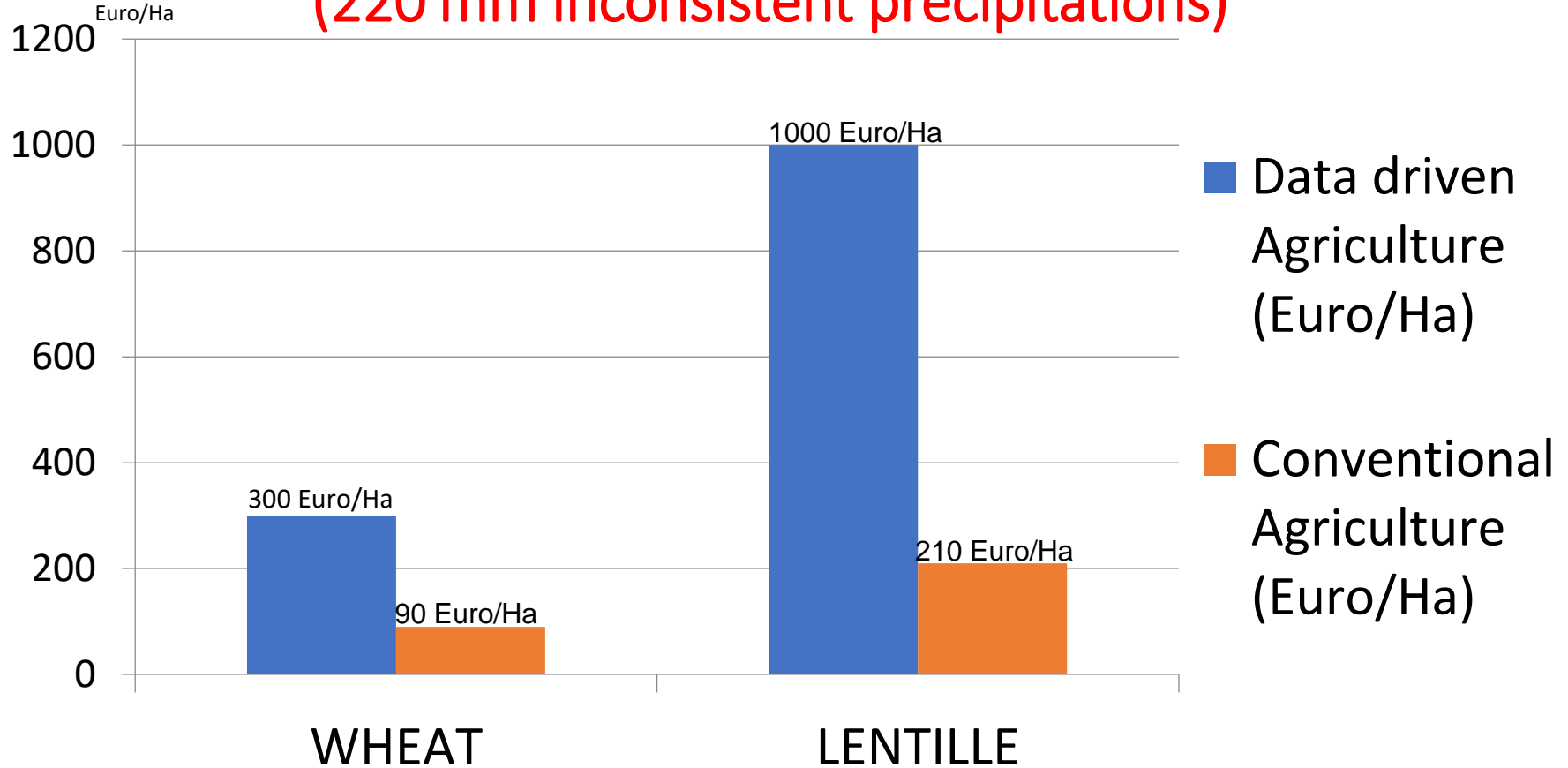
1

empower users as active participants rather than passive data “subjects”

2

ensure that we do no harm and that the way in which we use data and technology does not facilitate or exacerbate harm done by others

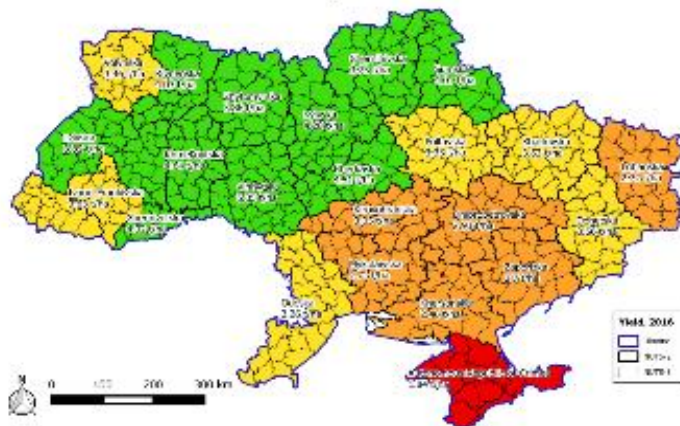
Comparison 2017 crops (220 mm inconsistent precipitations)



Local data integration– ex: lower water consumption

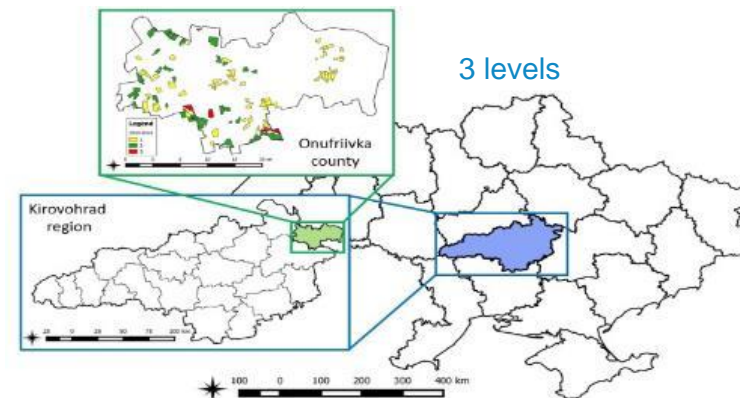


Regional/National: Crop forecasting



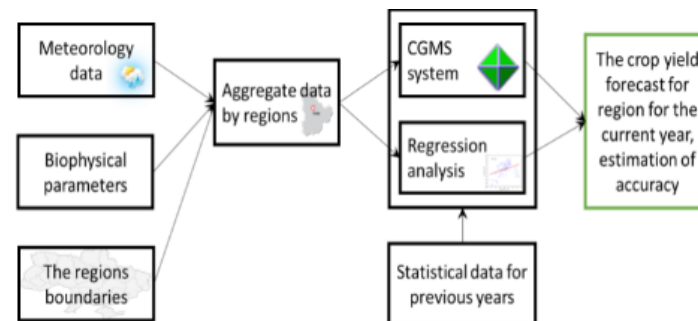
Algorithms based on:

- Historical data
- Soil moisture
- Precipitations (GPM)
- Weather conditions
- Spectral analysis (NDVI, ReCI, EVI)
- Biophysical parameters (LAI, FAPAR)
- Satellite imagery (Sentinel 2, Sentinel 1, Landsat 8, MODIS Mod13q1, commercial data e.g. RapidEye)

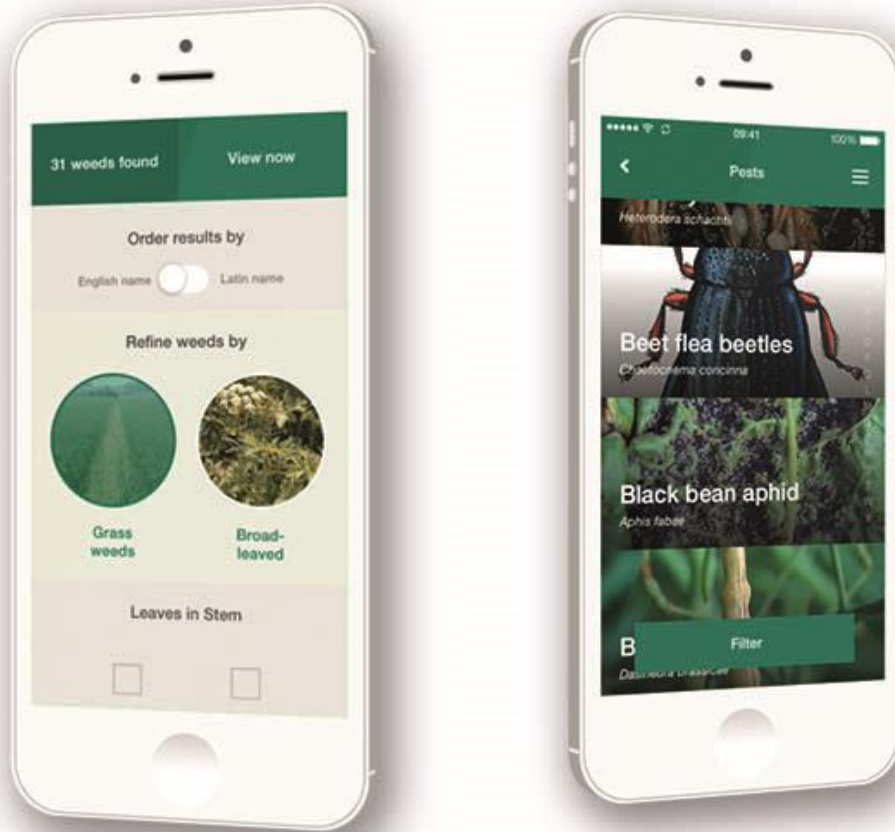


Crop forecasts:

Up to 90% accuracy.



- Big Data at your fingertips:



Market, weather and ag integration:

CONNECT WITH FARMERS

via SMS, voice-SMS and call centre

LEARN MORE →



PROJET STAMP – GARBAL Service – Mali:



Geodata – Big data for pastoralistes too!



Thank you!

Let's join the digital revolution!

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