



Paving
the **way** for
tomorrow's
agriculture

Digital Innovation for Sustainable Agriculture : the Greek Approach

COMAGRI Hearing, "EU support for innovation in agriculture", 18/02/2020

Elli Tsiforou

Director General, GAIA EPICHEIREIN

Scope of Presentation

FOCUS → Digital Innovation

1st PART:

The **gaia**sense Smart Farming system & its contribution to the sustainability of Greek agriculture

2nd PART:

Lessons learnt & take up for EU decision makers (CAP post 2020, Horizon Europe & broader EU policy framework)

Farming Community

71 agri – coops/ associations

150.000 farmers

IT Sector



NEUROPUBLIC
Information Systems & Technologies

Banking Sector

PIRAEUS BANK



Paving the
way for
tomorrow's
agriculture

Digital Innovation for Sustainable Agriculture: a best practice from Greece

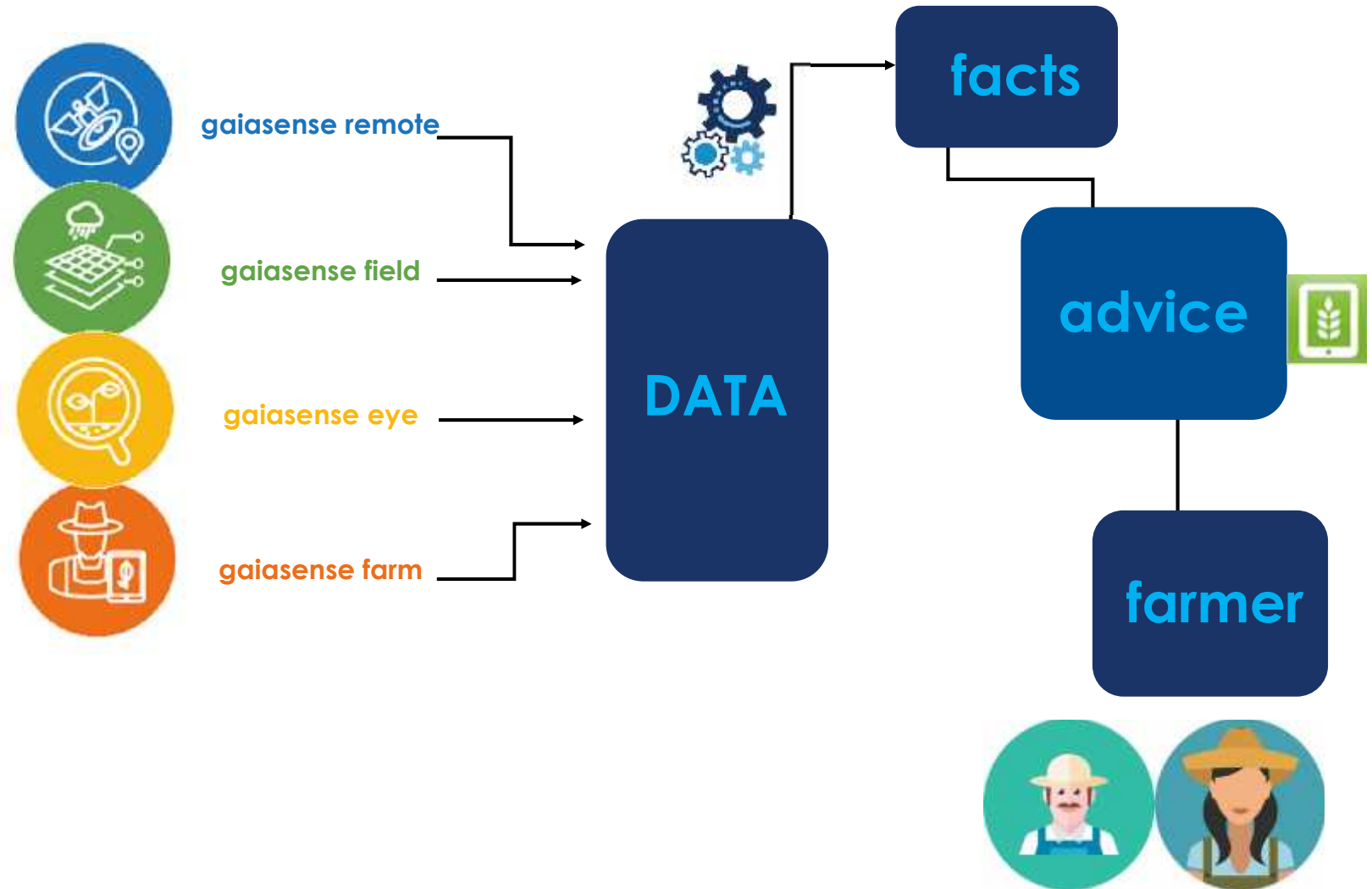


The **gaiasense** Smart Farming system is a Greek innovation developed by **NEUROPUBLIC SA**, serving the strategic objective of **GAIA EPICHEIREIN** to enhance the balanced sustainable development of Greek agriculture.

gaiasense collects data from the **field**, from **satellites**, from **scientists** and from the **farmers** themselves, allowing them to produce more (and better) with less.

Paving the
way for
tomorrow's
agriculture

From data acquisition to advice



Paving the
way for
tomorrow's
agriculture

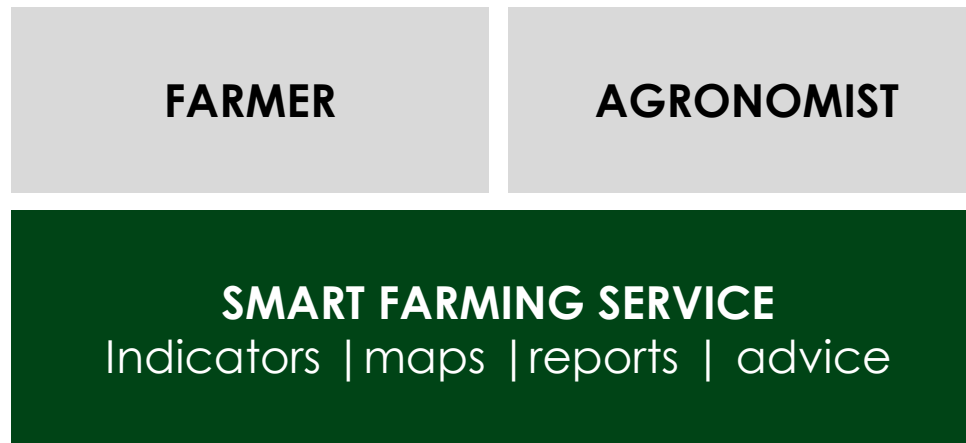
What do we measure?



Sampling Observations Analyses	Telemetric sensors in the field and on the tractor	Remote sensing methods Vegetation indicators Soil indicators	Crop applications log Farm profile
soil	plant	atmosphere	biological factors
temperature	phenological stage	temperature	insects
humidity	chlorophyll index	relative humidity	fungi
orientation	nutrients	leaf wetness	pests
gradient	micronutrients	rainfall	field applications
nutrients	water potential	solar radiation	spraying
micronutrients	root system	wind velocity	irrigation
mechanical composition	stomatal conductivity	wind direction	fertilisation
organic matter	residues	barometric pressure	seeding-planting
salinity	symptoms	irrigation water	soil treatment
pH	fruit size	salinity	inputs
calcium	trunk size	pH	harvesting
	cultivar		other activities
			spatial variability
			fertility
			Mechanical composition
			climate
			vegetation indices
			crop configuration
			Irrigation system
			planting
			pruning
			historicity

Paving the
way for
tomorrow's
agriculture

Smart farming advisory service



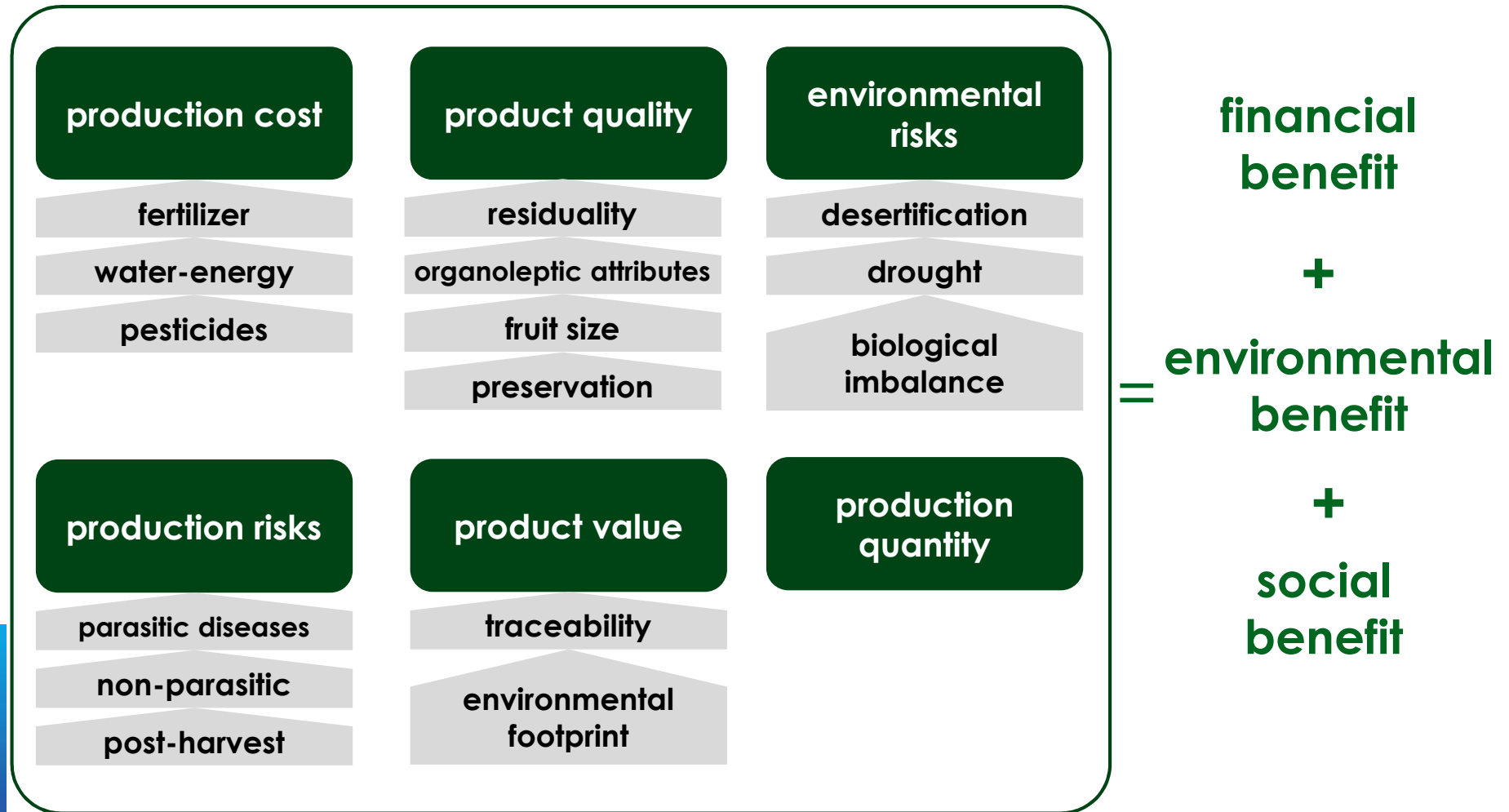
Paving the
way for
tomorrow's
agriculture

Quantified benefits of gaia**sense**

Crop type	INPUT REDUCTION (%)			YIELD INCREASE (%)	BENEFIT INCREASE (%)	OTHER BENEFITS		TOTAL BENEFIT INCREASE (%)	SERVICE COST (%)
	Crop Protection	Irrigation	Fertilization			Risk Management	Quality Improvement		
Table Peaches 🍑	11,22%	14,10%	65,42%	12,00%	29%	6	6	48%	3,00%
Almonds 🌰	28,30%	31,70%	59,87%	12,00%	35%	1	2	40%	2,00%
Stewed Peaches 🍑	11,68%	24,90%	37,45%	12,00%	26%	4	3	37%	2,50%
Table Grapes 🍇	7,19%	42,70%	46,35%	8,00%	25%	6	6	41%	3,00%
Pistachios 🌿	0,00%	24,60%	12,30%	12,00%	18%	1	2	22%	2,00%
Olives 🌿	63,46%	33,67%	33,69%	8,00%	36%	2	3	43%	2,00%
Dry Beans 🌱	3,10%	27,80%	29,59%	16,00%	26%	2	3	35%	1,50%
Potatoes 🥔	9,05%	32,40%	14,67%	16,00%	26%	2	3	35%	1,50%
Cotton 🌱	0,00%	45,70%	28,85%	18,00%	30%	2	3	39%	1,50%

Paving the
way for
tomorrow's
agriculture

Overall sustainability benefits of gaia**sense**



Paving the way for tomorrow's agriculture

Smart Farming As a(n Advisory) Service...for all farmers

Features	Advantages
Subscription based	Infrastructure developed, maintained & operated by a central entity. No barrier to entry low cost solution accessible to all farmers, even in MS/regions/sectors with high fragmentation & low investment capacity.
Holistic, modular & customizable	Combining data from all available sources including the farmer himself. Developed around the needs/reality of all farmers/sectors/regions.
Human-centric & advice oriented	Articulated around local interactive innovation ecosystems where advisors act as innovation brokers accompanying & supporting the farmers throughout the process.

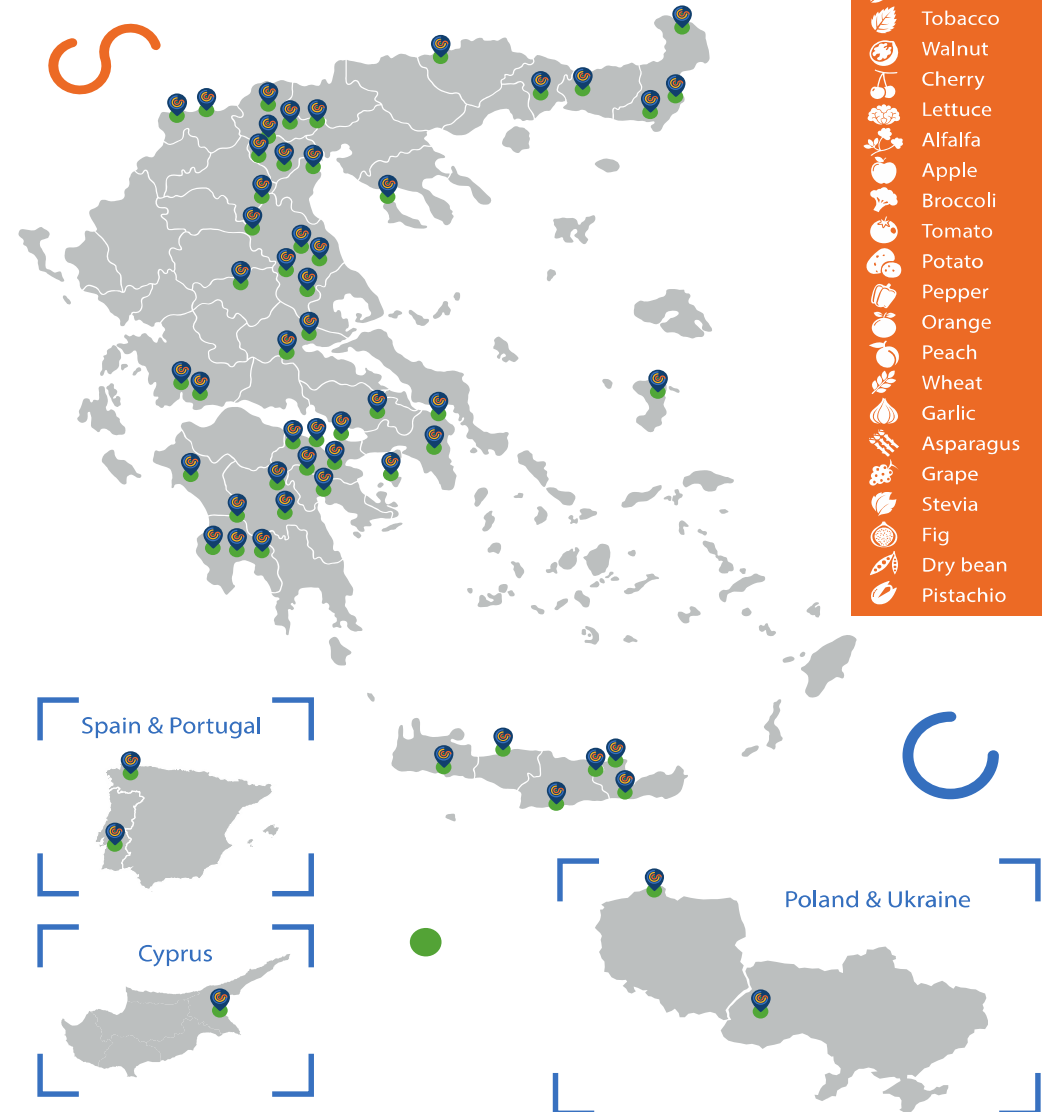
Spatial deployment of gaia**sense**

current installations


65 sites
250 stations
6 countries
30 crops
> 100.000 ha

Paving the
way for
tomorrow's
agriculture

The geographic deployment of gaia**sense**



Funding

EU policy	Programme
Research & Innovation	Horizon 2020
Environment	LIFE 
Cohesion	National Strategic Reference Framework 2014-2020 : Operational Programme "Competitiveness, Entrepreneurship, Innovation"
Common Agricultural Policy	<i>Under evaluation</i> RDP Measure 16-Cooperation (36 Operational Groups) <i>Not launched yet</i> RDP Measure 2-Advisory Services

Paving the
way for
tomorrow's
agriculture

Lessons learnt

- Low awareness & uptake on behalf of the farming community
- Fragmented & weak advisory system

FARMERS

- Need to cushion risk during the transition phase
- **Trust** : a key factor for adoption & successful implementation
- Mentality shift : from “traditional” advice to innovation-based advice

ADVISORS

- Lack of training
- Need for better interconnection with other actors of the Agricultural Knowledge & Innovation System (AKIS)

Take up for EU decision makers

EU GREEN DEAL – CAP POST 2020



PRIORITY: Fast & **Just Digital Transition** for all EU farmers & sectors

PREREQUISITE: Common, Coordinated, Sufficiently Funded, Targeted & Pragmatic policy approaches

No environmental sustainability without the economic & the social dimension

Take up for EU decision makers

Research & Innovation at the service of the farming community (& not the opposite)

- Horizon Europe 2021-2027: place farming community's interests at the heart of the innovation process, involvement from the very beginning in R&I activities
- Less administrative burden
- 100% funding for participation in Innovation Actions (instead of 70%) and/or using lump sum to cover farmers' costs

Digital farm advisory services in the AKIS 2.0

- Enhance AKIS & the role of advisors within the AKIS but performance varies great between MS/regions : need to encourage & support “convergence”
- Operational Groups (SCAR AKIS 4th Report) : from funding impactful innovation projects → to stimulating supporting services (attention to complete innovation ecosystem)

Boost digital transition investments

- EU Green Deal Investment Plan : enhance sectorial dimension
- Boost & better target investments in the context of a sufficiently funded CAP

Provide farmers with incentives to cushion risk

- Smart farming eco-scheme to support farmers during the transition phase

Exploit the potential of collective farmers' schemes (agri-coops)

- Advantageous platform for innovation diffusion in an environment of trust
- Territorial dimension : innovation spillover effect

Awareness raising, communication & education

- Targeted awareness raising & communication support
- Digital skills : not only for farmers but also for advisors
- Encourage & support exchanges between farmers (ERASMUS+, future EIP-AGRI actions etc.)



THANK YOU!

e_tsiforou@c-gaia.gr

Paving the
way for
tomorrow's
agriculture

