



Smart farming for a more sustainable agriculture

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Sustainable solutions to protect crops

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Farming Community

71 agri – coops/
associations

150.000 farmers

IT Sector



NEUROPUBLIC
Information Systems & Technologies

Banking Sector

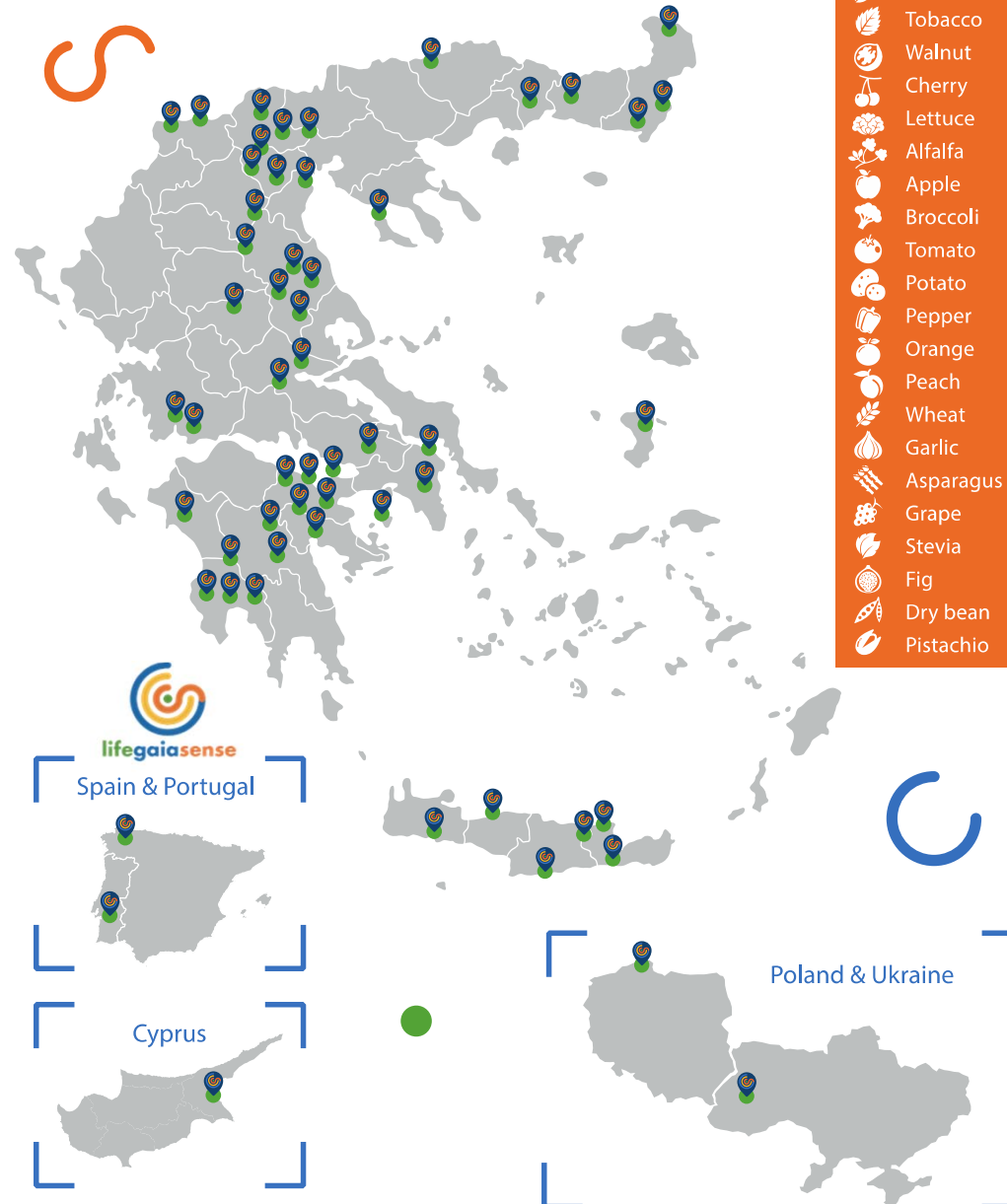
PIRAEUS BANK



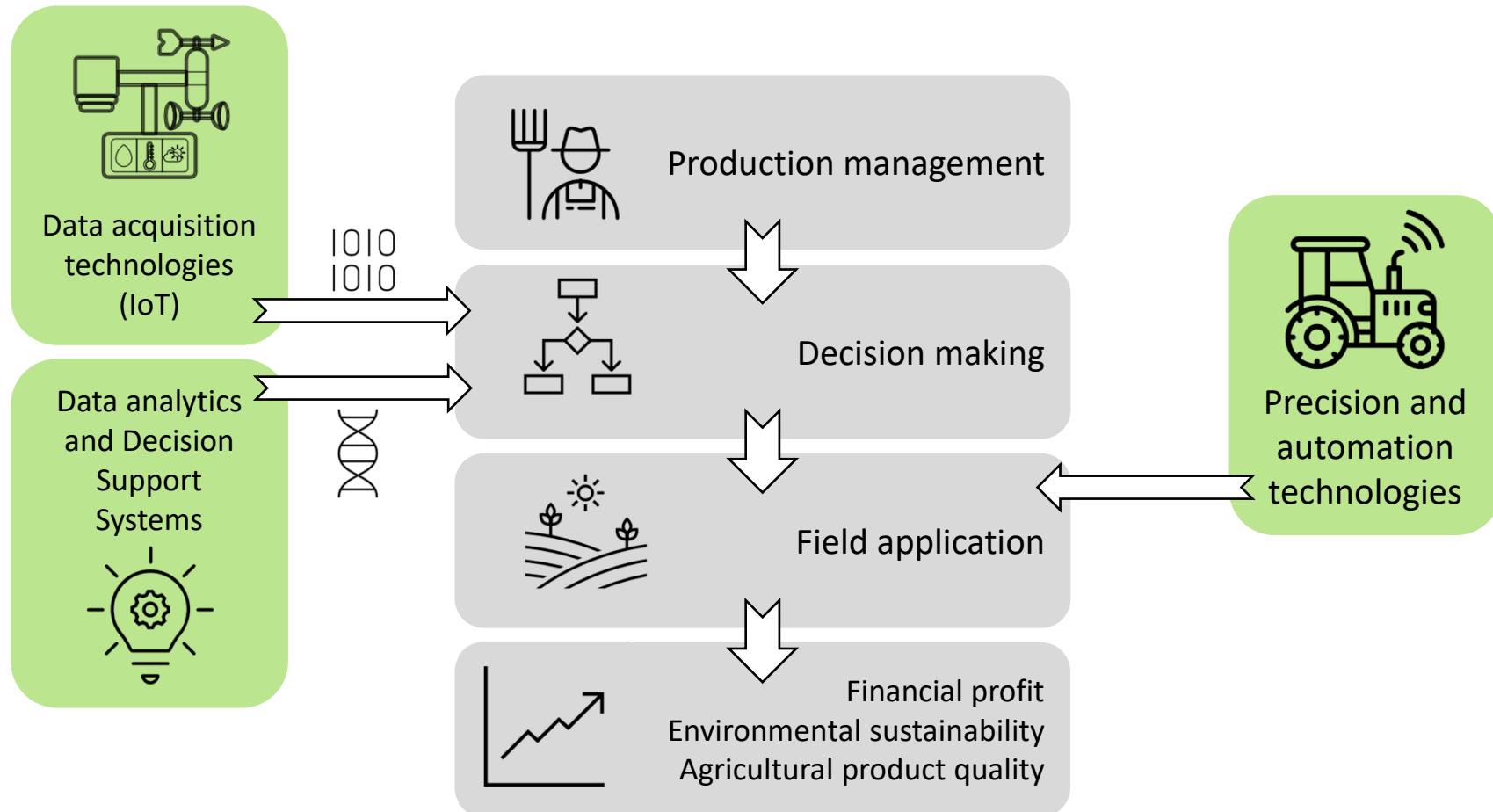
The geographic deployment of gaiaSense system

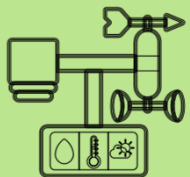
current installations

70 sites
>300 stations
6 countries
30 crops
>150.000 ha
>30.000 farmers



smart farming process





Data acquisition
technologies
(IoT)

remote



field



data

Field
agronomist

eye



Support
agronomist

farm



centralized technological and operational infrastructure of data collection



Sampling
Observations
Analyses



Telemetric sensors in the
field and on the tractor



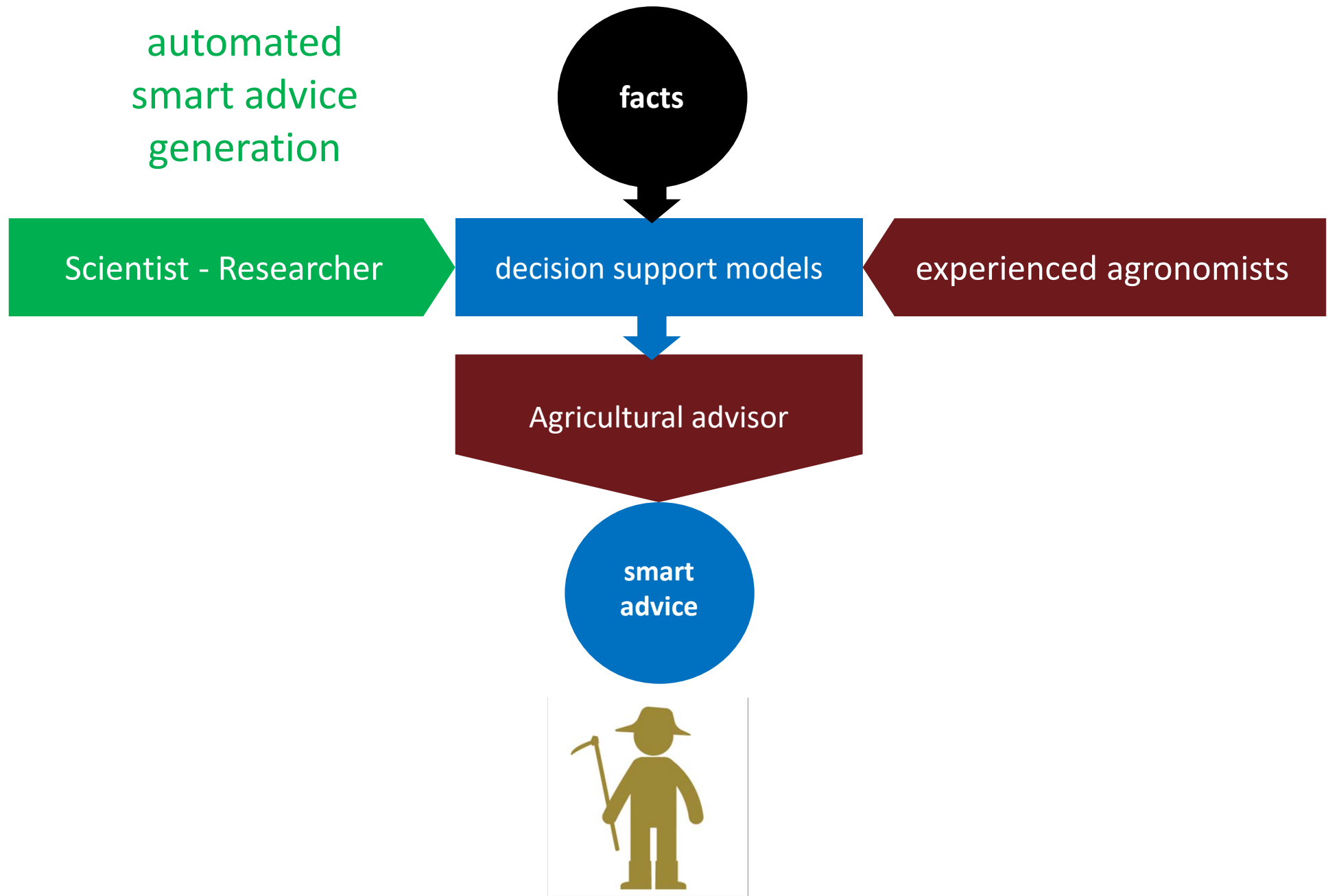
Remote sensing methods
Vegetation indicators
Soil indicators



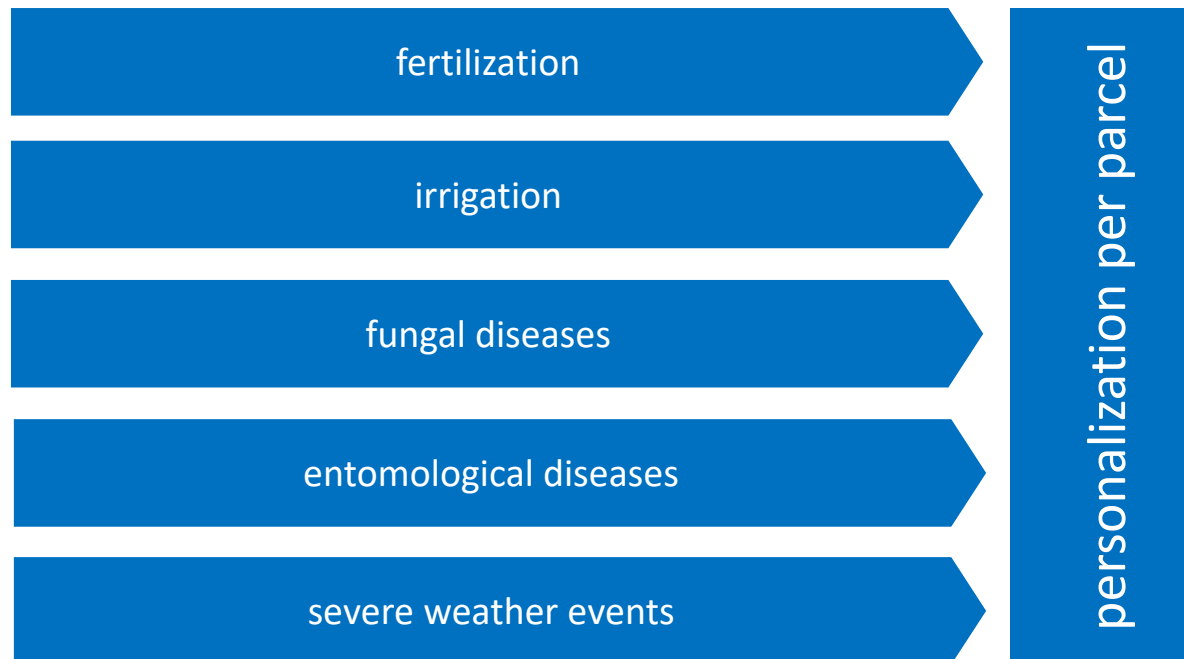
Logging of crop applications
Farm profile

soil	plant	atmosphere	biological factors	spatial variability
temperature	phenological stage	temperature	insects	fertility
humidity	chlorophyll index	relative humidity	fungi	soil structure
orientation	nutrients	leaf wetness	pests	climate
gradient	micronutrients	rainfall	field applications	vegetation indicators
nutrients	water potential	solar radiation	spraying	crop configuration
micronutrients	root system	wind velocity	irrigation	Irrigation system
mechanical composition	stomatal conductivity	wind direction	fertilisation	planting
organic matter	residues	barometric pressure	seeding-planting	pruning
salinity	symptoms	irrigation water	soil treatment	historicity
pH	fruit size	salinity	inputs	
calcium	trunk size	pH	harvesting	
	cultivar		other activities	

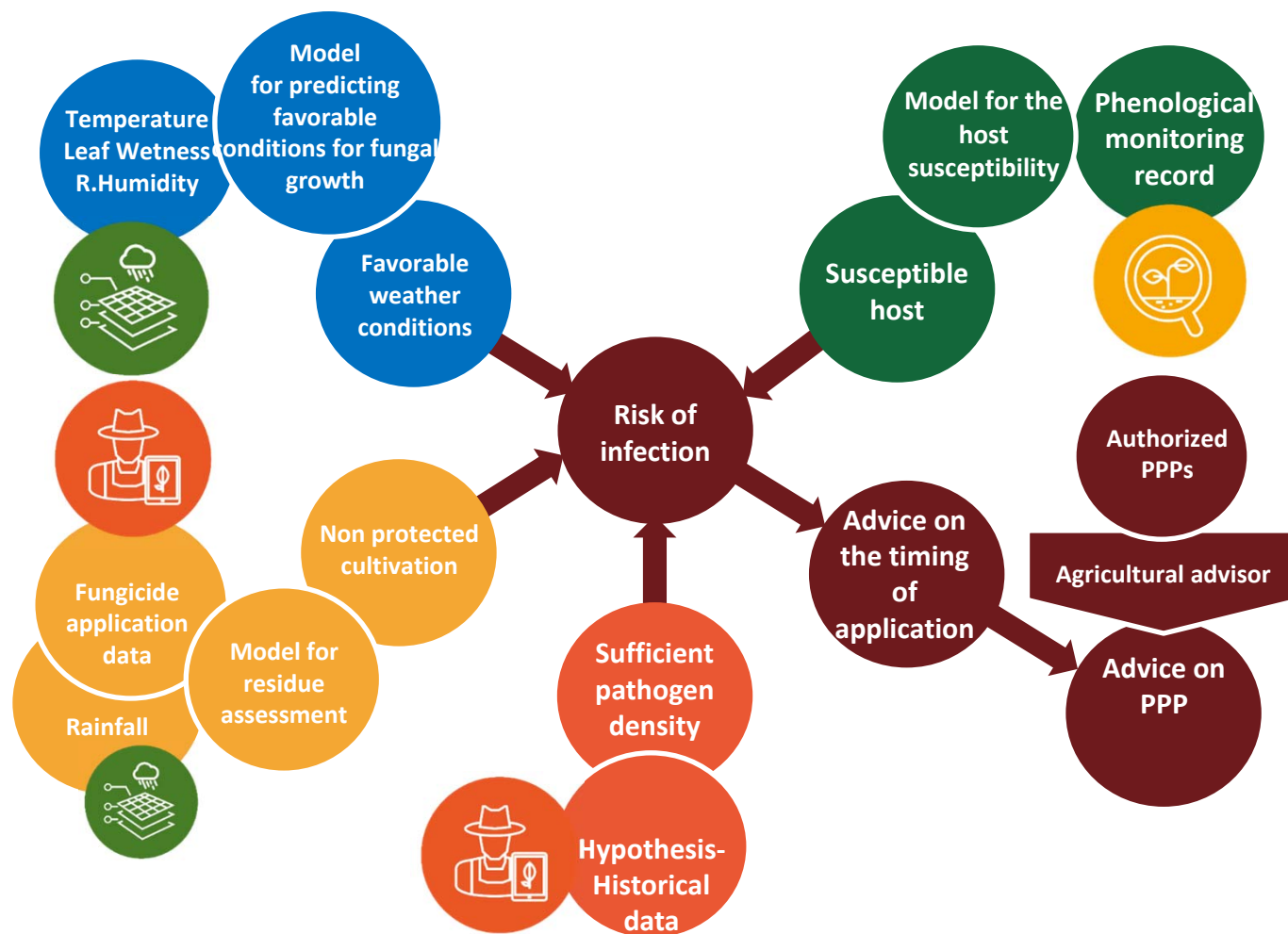
automated
smart advice
generation



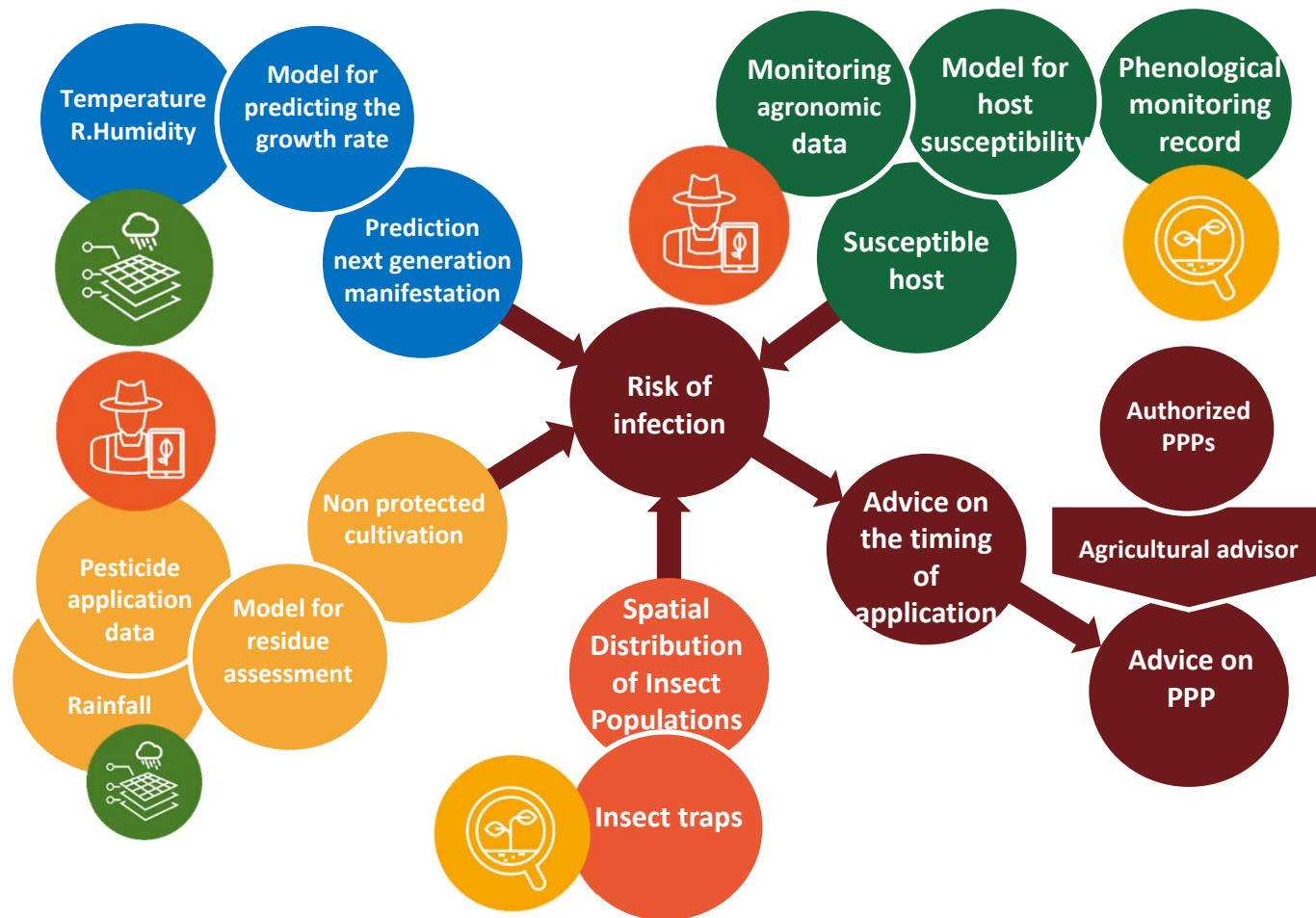
automated advice content



Prognostic models for the prognosis of fungal diseases



Prognostic models for the prognosis of pest diseases



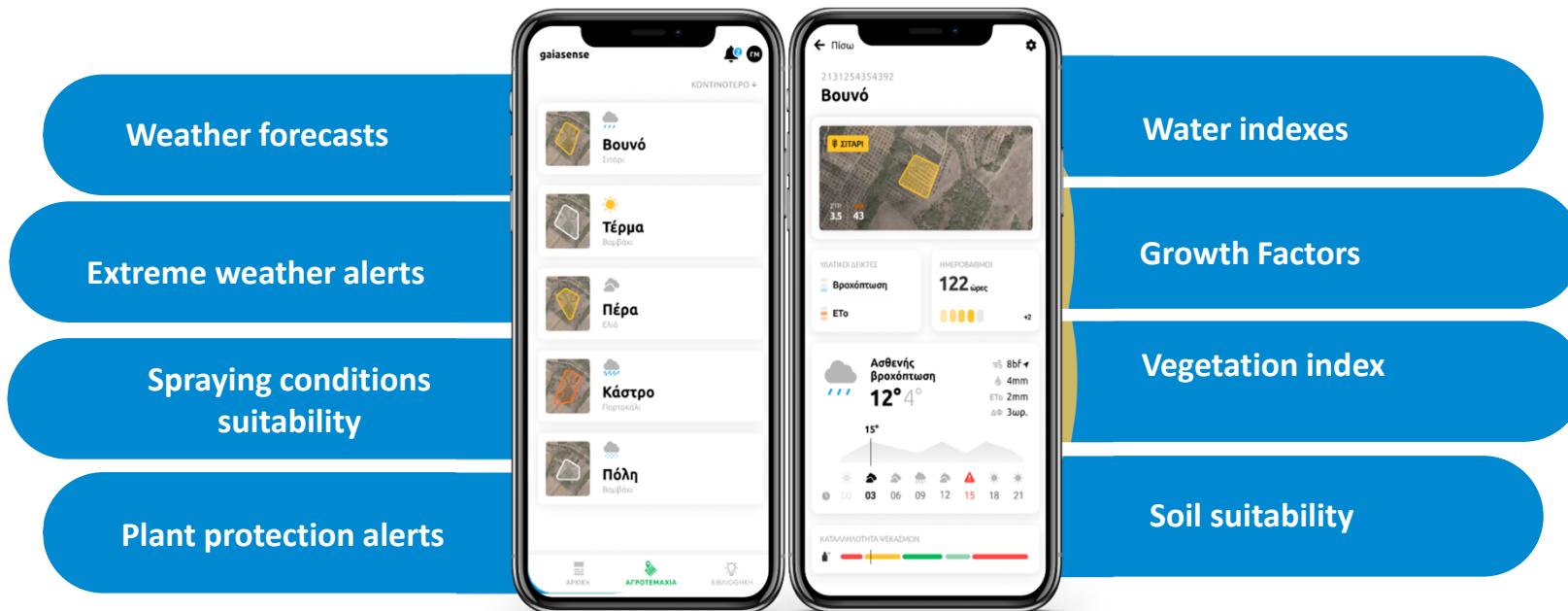
Average economic benefit from the reduction in plant protection inputs

CULTIVATION	MEASUREMENT PERIOD	BENEFIT
ALMONDS	2017-2019	20.73%
COTTON	2018-2020	36.84%
OLIVE GROWING	2016-2020	37.09%
NUTS	2020	3.20%
CHERIES	2019-2020	31.66%
NECTARINES	2018-2019	8.74%
POTATOES	2017-2020	16.03%
CHICK PEAS	2019	17.24%
PEACHES	2017-2020	8.62%
TABLE GRAPES	2017-2018	19.68%
TOMATOES	2018-2019	46.05%
BEANS	2017	3.10%
PEANUTS	2019	46.99%
		22.76%

Average benefit in terms of production efficiency from the smart application of plant protection

CULTIVATION	MEASUREMENT PERIOD	BENEFIT
ALMOND	2018	19.25%
COTTON	2018	30.42%
OLIVE GROWING	2018-2020	18.21%
NUTS	2020	13.65%
CHERRIES	2019	13.64%
NECTARINES	2018-2020	19.86%
POTATOES	2017-2020	18.80%
PEACHES	2017-2020	9.41%
TABLE GRAPES	2017-2018	20.41%
GRAPES FOR WINEMAKING	2019	5.34%
STEVIA	2019	66.67%
TOMATOES	2019	4.39%
BEANS	2017	28.00%
PEANUTS	2017-2018	67.50%
		23.97%

GAIASENSE 1 : a smart tool to familiarize Greek farmers with digital technologies/enable the large scale diffusion of smart farming





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