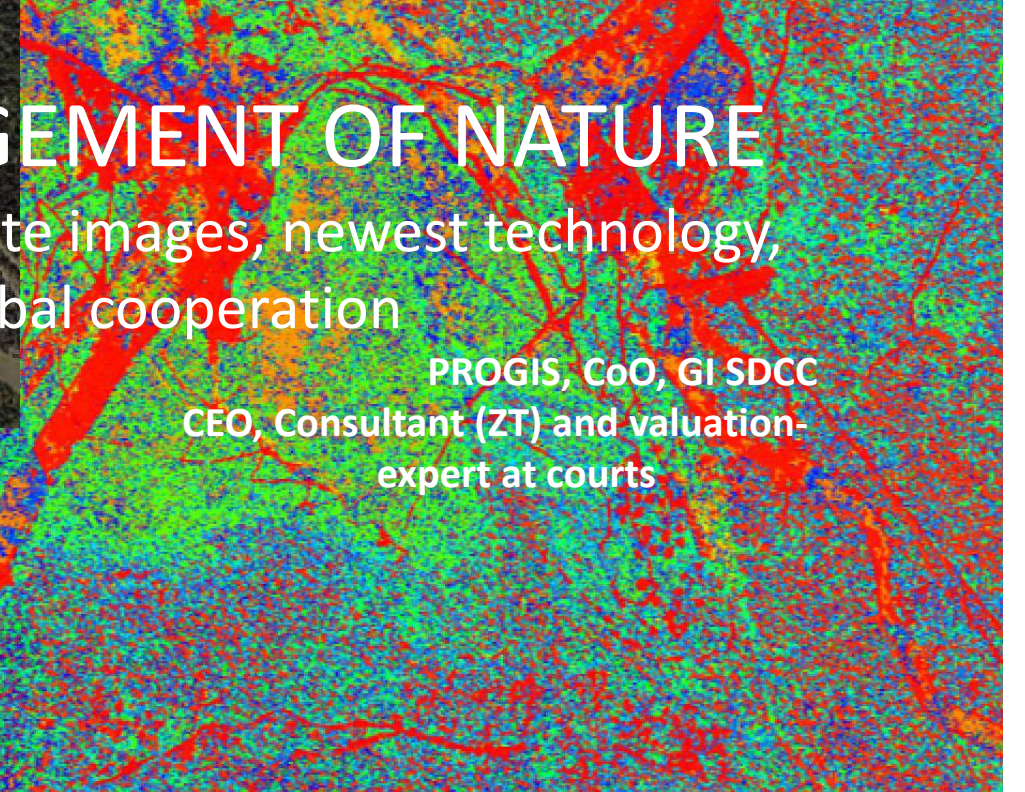
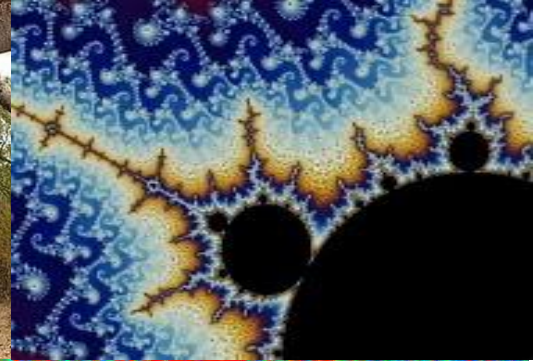




# FAO/ITU for DIGITAL AGRICULTURE SOLUTIONS FORUM 2020 ASIAPAC



DIGITIZING THE ECOLOGY BRINGS NEW INFORMATION - BETTER DECISIONS, GLOBAL USE, COOPERATIVE, PRECISE, and E<sup>3</sup>: daily, global Ecology + Economy + Energy – SUSTAINABLE with SAFER: Sustainable Agriculture Forestry Environment, natural Riskmgmt.

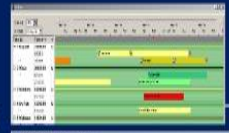
## SUSTAINABLE MANAGEMENT OF NATURE

supported by time related satellite images, newest technology, local knowhow and global cooperation

Dipl.Ing. Walter H. MAYER,

PROGIS, CoO, GI SDCC  
CEO, Consultant (ZT) and valuation-  
expert at courts

WHEN



WHAT

Expert data

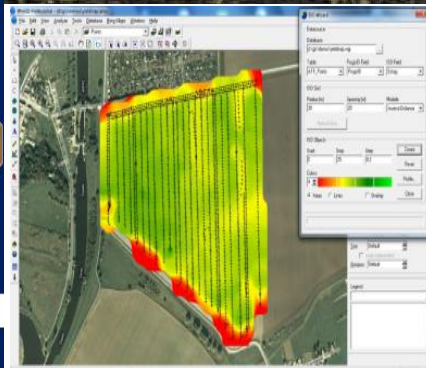
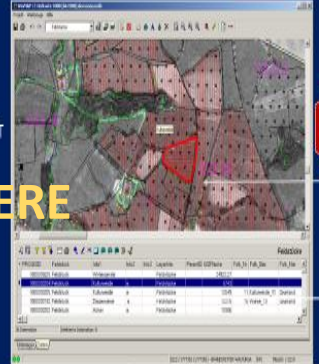
when what

where

ICT TOOLS

FARM-FORESTRY-ADVISORY-MANAGEMENT

WHERE



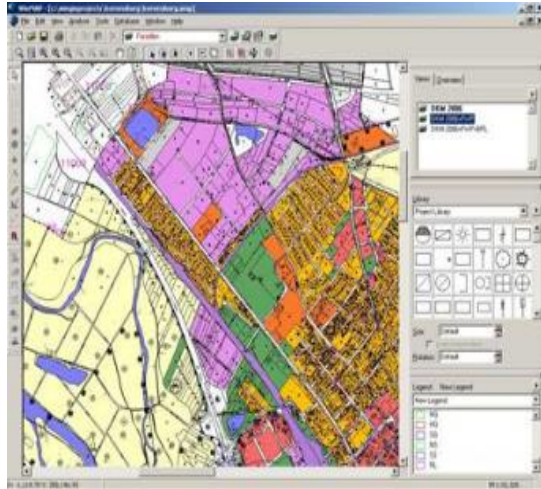


# EXISTING TECHNOLOGY AND CUSTOMER NEEDS

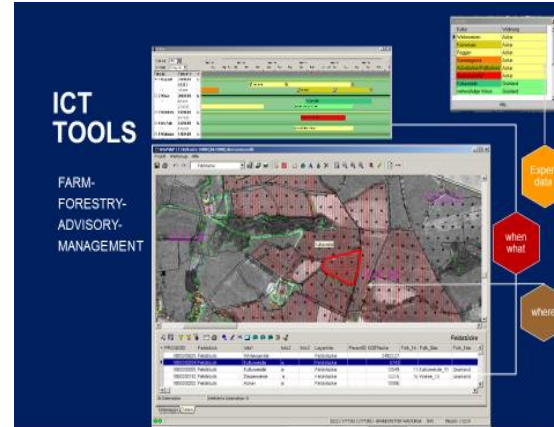
- Step 1: Cooperation of organisations and technologies:
- ORGANISATIONS:
- Ministry, Advisory services (public or private), buyers, sellers, cooperatives
- Cooperatives means to use the strength of common cooperation of farmers for common targets
- It started in Austria on mountains. today for many tasks like Machine use, buying and selling of products, advisory service, any support, help, .....
- TECHNOLOGY: used by different organisations with different subtargets for the same nature!
- satellite images with 0,5m resolution as fundment
- Information: ownership, soil, water, weather, buyer, seller, consumers, quality, price, farm to fork
- Step 2: Define sustainable target for all for all groups:
- DATA transfer to INFORMATION and transfer to PRECISE DECISIONS for WHEN WHAT WHERE
- ECONOMY targets: location and size of fields, prices, manpower, costs and revenues, machnes, .....
- ECOLOGY targets: optimized for nature with humans, infrastructure, time, cost-benefit-damages
- Energy targets: optimize use, low costs, no damages, sustainable energy use: Sun, water, wind!
- Step 3: Controll all E<sup>3</sup> Economy Ecology, Energy targets
- TARGET: SUSTAINABLE MANAGEMENT OF ALL INEGRATED TOPICS: PPP + TECHNOLOGY can help!

# EXISTING AND 40 COUNTRIES INSTALLED 25 YEARS

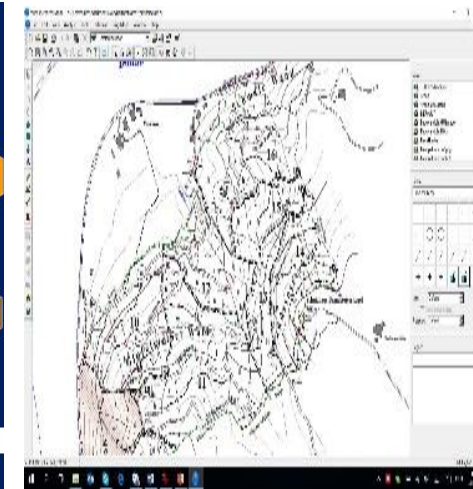
## WINGIS: Geographical Info System



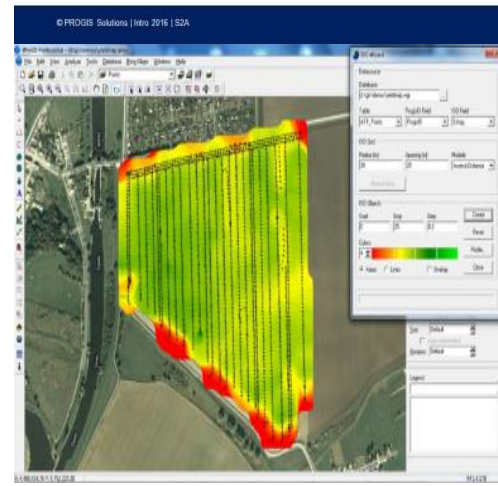
## DokuPlant – Farm-management



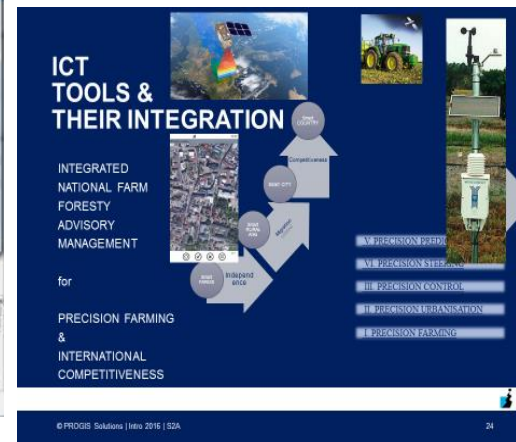
## ForestOffice - Forest inventory



**Logistics and mobGIS = Stakeholder cooperation**



**Precision Farming tools Education: Club of Ossiach/A**



**Intgrate technology + educate: 2 Clubs/A: CoO + SDCC**

# 1 SATELLITE IMAGES 2 GIS 3 DATABASE FOR FARMERS FOREST-ENTERPRISES

WINGIS: Geographical Info System

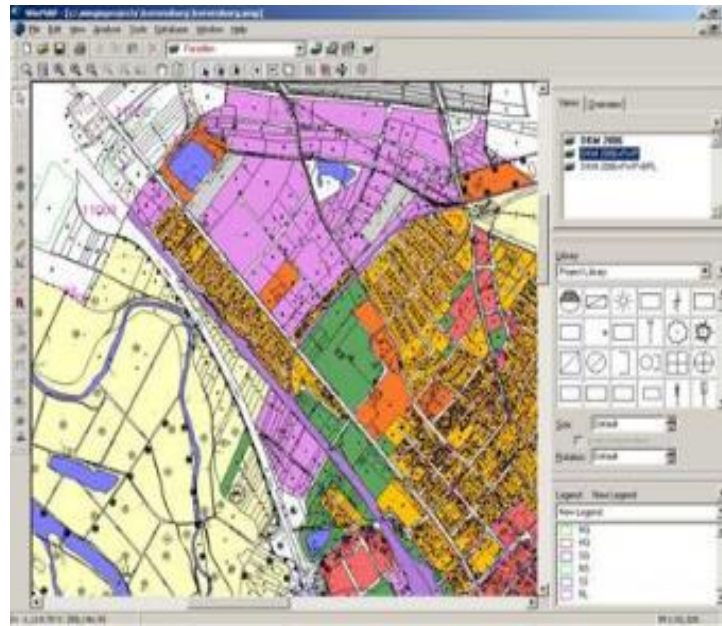
DokuPlant – Farm-management

ForestOffice - Forest inventory

**ICT TOOLS**  
FARM-FORESTRY-ADVISORY-MANAGEMENT

Expert data  
when what  
where

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- **Forestry:**
- Forest management or before forest inventory
- Inventory done all 5-10 years and upgrade yearly
- Where which sorts to cut, do offers, agreements
- Manage work, costs, sales, revenues, © FROGIS Solutions | Intro 2016 | S2A

- **Agriculture:**
- Geography data:
- Field size in ha/m<sup>2</sup>/any.....
- Location, km distance
- Plan when where what to do
- from cultivation to harvest
- and all steps between
- Plan all needed input like
- Seeds, fertilizer, herbicides, ...
- manpower, machines, support
- Plan all output and selling
- Harvest expect per field, crop
- Summarize all data for farm
- as advisor/groups regional data
- Regional sales offer f buyers
- Ministry some data countrywide
- organize services for farmers
- subsidy management based on
- growth data single/group/all
- who where grows what

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# Cooperative management: German Machine Cooperatives 160.000 members

Logistics and mobGIS: Stakeholder cooperation

**LoGISTics AGRO - FOREST - LOGISTIC**

Harvester  
Loader/Forwarder  
Truck  
Mobile Office  
GPRS/UMTS

Largest EC project: 45 cooperatives, using 100+ harvesters with mobGIS handling 100K+ datasets for 40.000 farmers on 40.000km<sup>2</sup> - all online with update all 30 seconds!

PLAN: 2014 GERMANY  
Country coverage in 2014 (170 stations)  
• Precision farming on top  
• Mobile devices (tablet-PC, smartphone)  
links: farmers to land

PROGIS  
Software that Shows

**ICT TOOLS & THEIR INTEGRATION**

INTEGRATED NATIONAL FARM FORESTRY ADVISORY MANAGEMENT

for

PRECISION FARMING & INTERNATIONAL COMPETITIVENESS

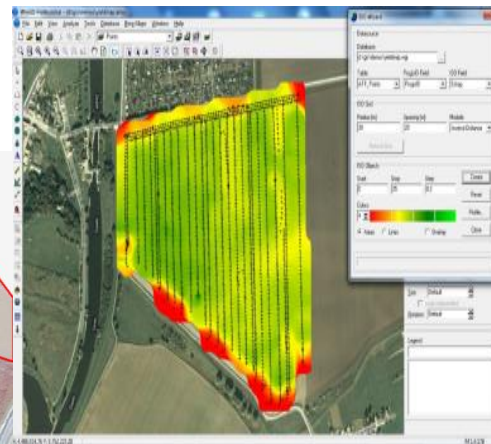
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## MACHINE COOPERTAIIVES USE CENTRAL + MOBILE LOGISTIC:

- HQ, 150 coops, 160.000 members
- 1 farmer + machine(s) support many Farmers get Farmer + Entrepreneur
- Cooperative organises the Logistic
- Plan when who where what todo
- Plan for members work to be done
- Location, distance, plan, bill
- Contract for all cultivation to harvest
- Central stations at home and mobGIS mobile device / PC / Handy
- All permanent online
- mobGIS get contract from central
- Calaculates km and size in ha/...
- Reports automatically finalizing and bill is automatialla done

## Precision Farming with tools

- Field are not unique – partly +/-
- Sat images, local devices evaluatuon is done
- Optimize costs, revenues, ecologic i/o
- Use less fertilizer, pesticides, seeds etc.
- Weather-, soil sensors measure i/o
- Equipment + maps optimize input
- Optimize economy + ecology





## EDUCATION – TRAINING – TECHNOLOGY INTEGRATION

### EDUCATION – Club of Ossiach

**Targets:** A group of agriculturists, agribusiness managers, agriculture technologists and agricultural ICT specialists from around the world, create the “AgriFuture Days” Conferences, review current trends and possible discontinuities resulting from political, social, environmental and technological changes, potentially impacting on the future of agriculture, farming, rural viability, food and nutrition worldwide.

**Selected members: total ~ 150 from 40 countries: Robin Burgeois/GFAR, Ajit Maru/FAO, Ehud Gelb/Uni, Kyamakya/Uni, Pessl CEO, Gurbrod/CEO, Varge/Uni and ~150 others**

**New members invited: please mail to [office@progis.com](mailto:office@progis.com) under “Club od Ossiach”**

### INTEGRATED TECHNOLOGIES SDCC Club – Sustainable Digital Country Consortium

**Targets:** For the optimized management and for the control of these areas we need to use best technologies for planning, management and control. Many technologies are available but split into many single elements managed by many different companies out of different countries. The target was to setup a **SAFER DIGITAL COUNTRY CONSORTIUM** with a group of companies that are able to deliver know how and technologies to plan, manage and control rural areas regionally, countrywide and globally!

**Selected members: SIVCO Rumanian subsidy mgmt., GI GIS implementation, PROGIS GmbH. GIS + IDIMA + Apps development, Pessl Weather-stations, Ovidiu V. Earmarks, .....**

**New embers invited: please mail to [office@progis.com](mailto:office@progis.com) under “SDCC”**

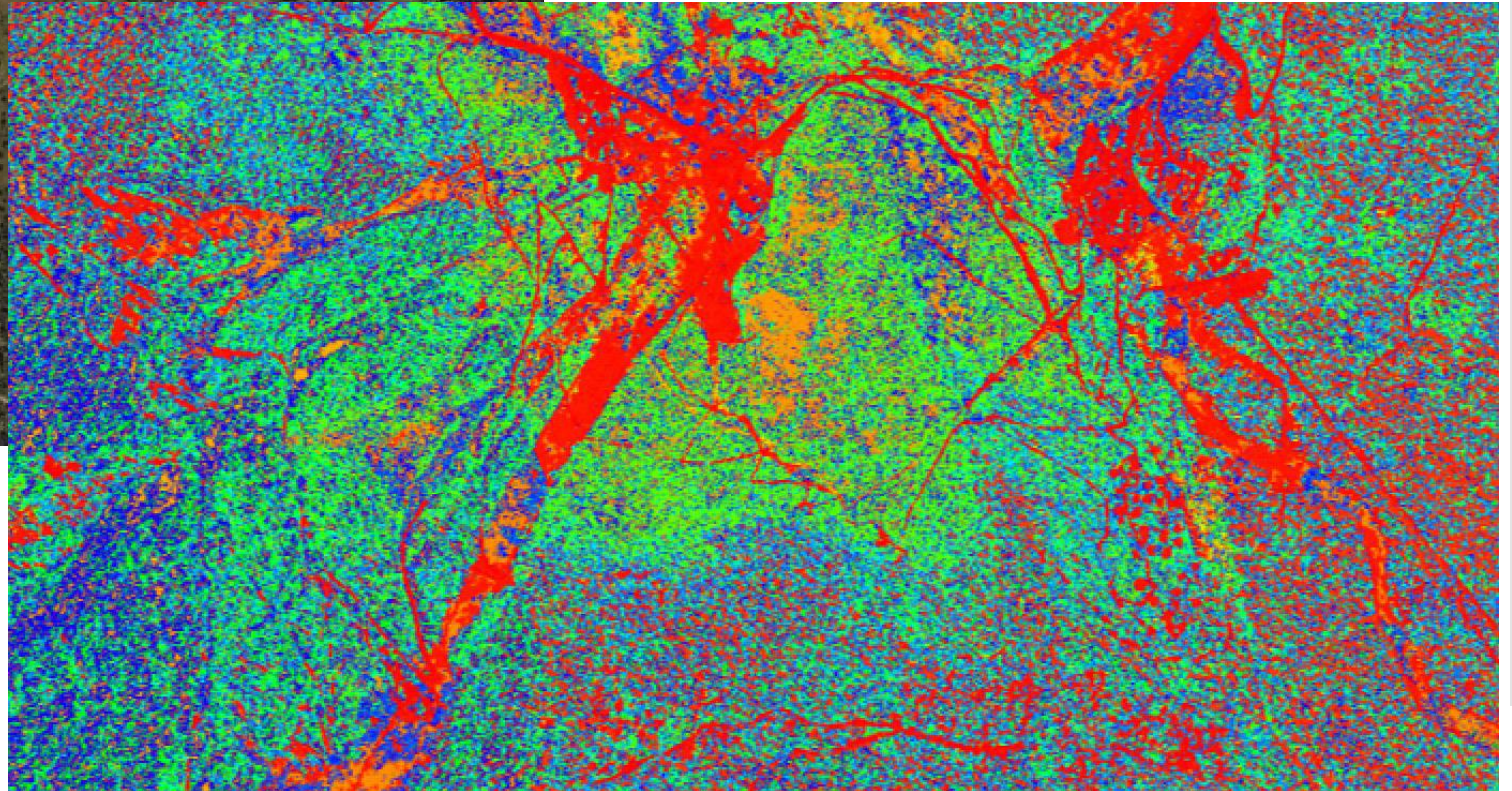
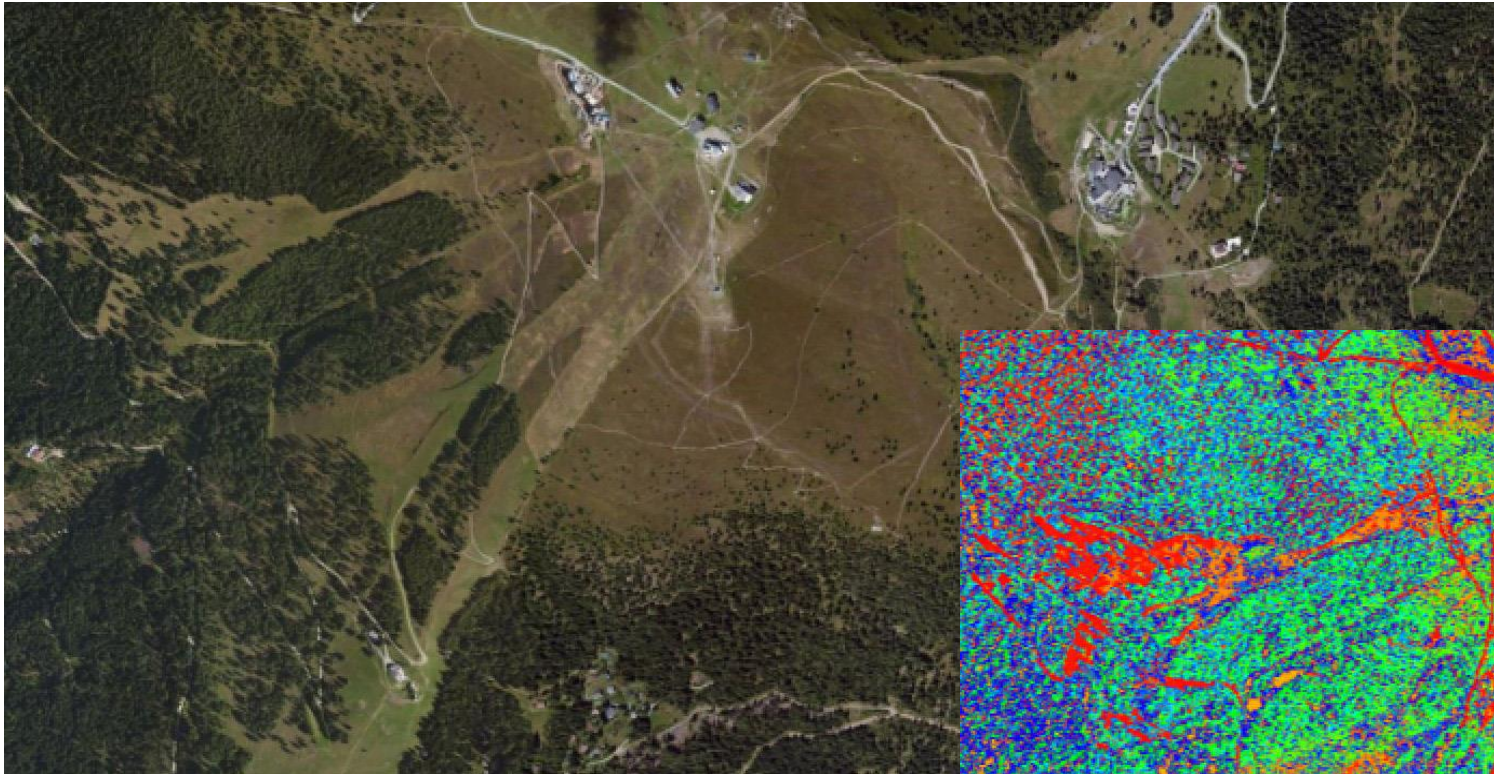


# TRANSFER DATA TO INFORMATION TO GET PRECISE INTEGRAL DECISIONS

## NEW: INFORMATION GERLITZE

### VILLACH top 1950 m Ski-area

Colours show different land use: red: downhill ski ares & slopes, light green: larch, dark green-blue mixed more or less larch and spruce, red dotted: Afforestation regions, orange: existing or new slopes with greening uptake!

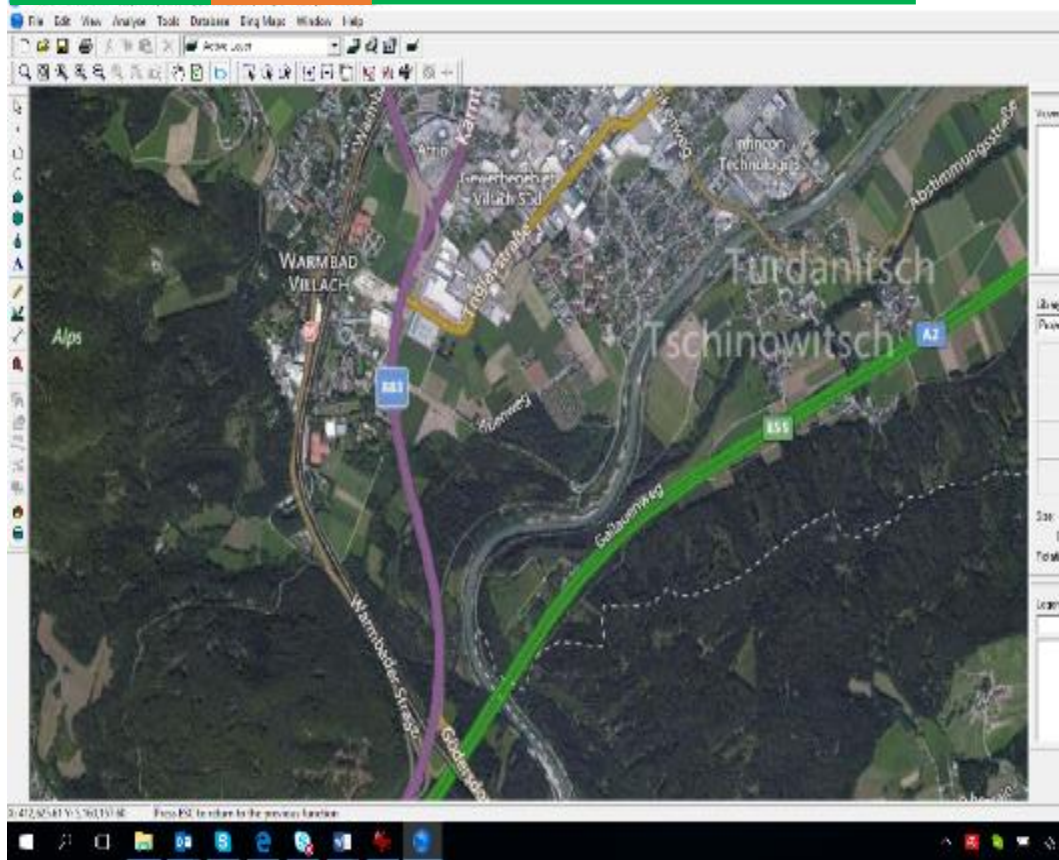


## OLD: DATA PIC GERLITZE VILLACH:

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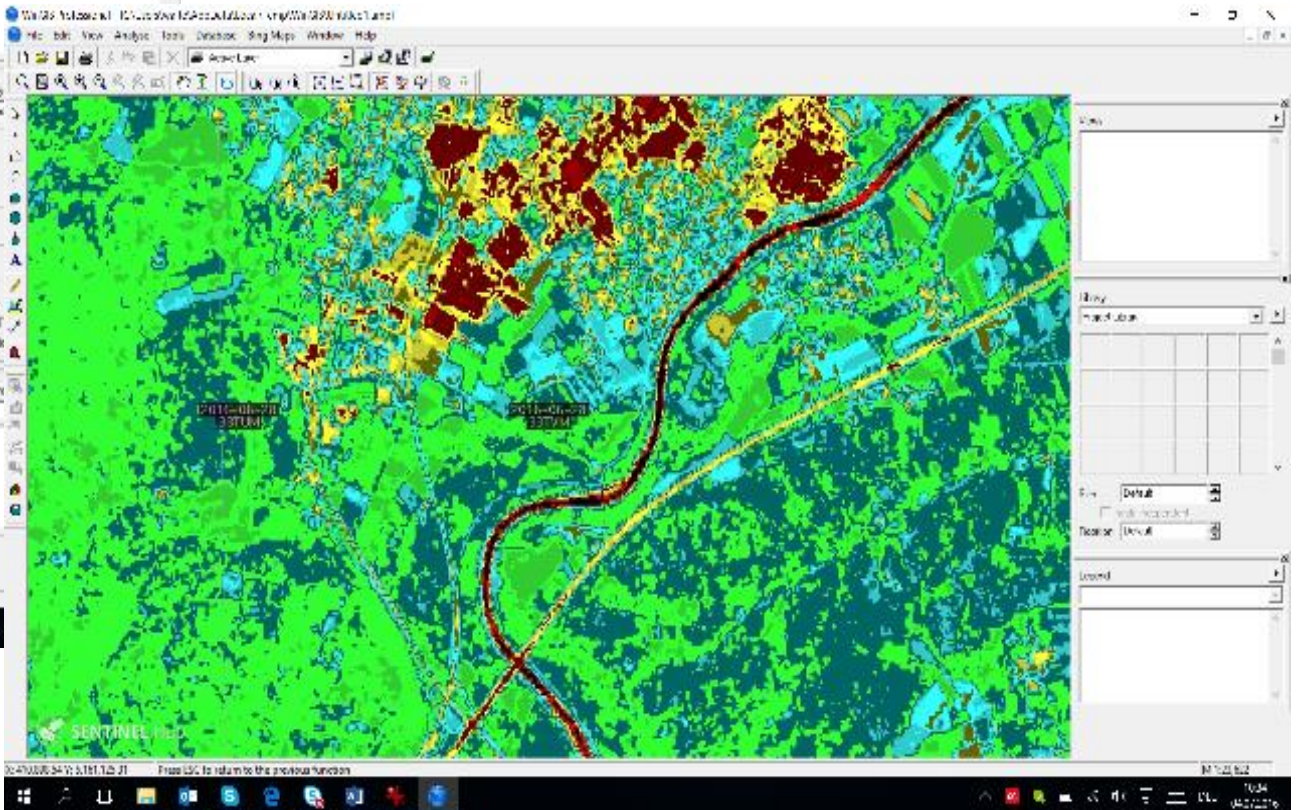
# TRANSFER DATA TO INFORMATION TO GET PRECISE INTEGRAL DECISIONS

## OLD = DATA PIC CITY VILLACH



## NEW = INFORMATION VILLACH

**South of city, neighbouring forest, colours:**  
Darkgreen spruce, lightgreen beech, brown houses and gardens  
Digitize automatically on top next layer and produce – new – a database „what is what“, done by experts, used by all partners!



**Key for above right is local know how, not IT:**

**Cooperation is a must: A top CEO mentioned weeks ago: They will define algorithm!**  
**2 Mio plants- and animal-species, 100.000+ soils, geology, humus, meteorology, chemical combinations and a handful of soil has more microbes as global inhabitants: BIG DATA!**

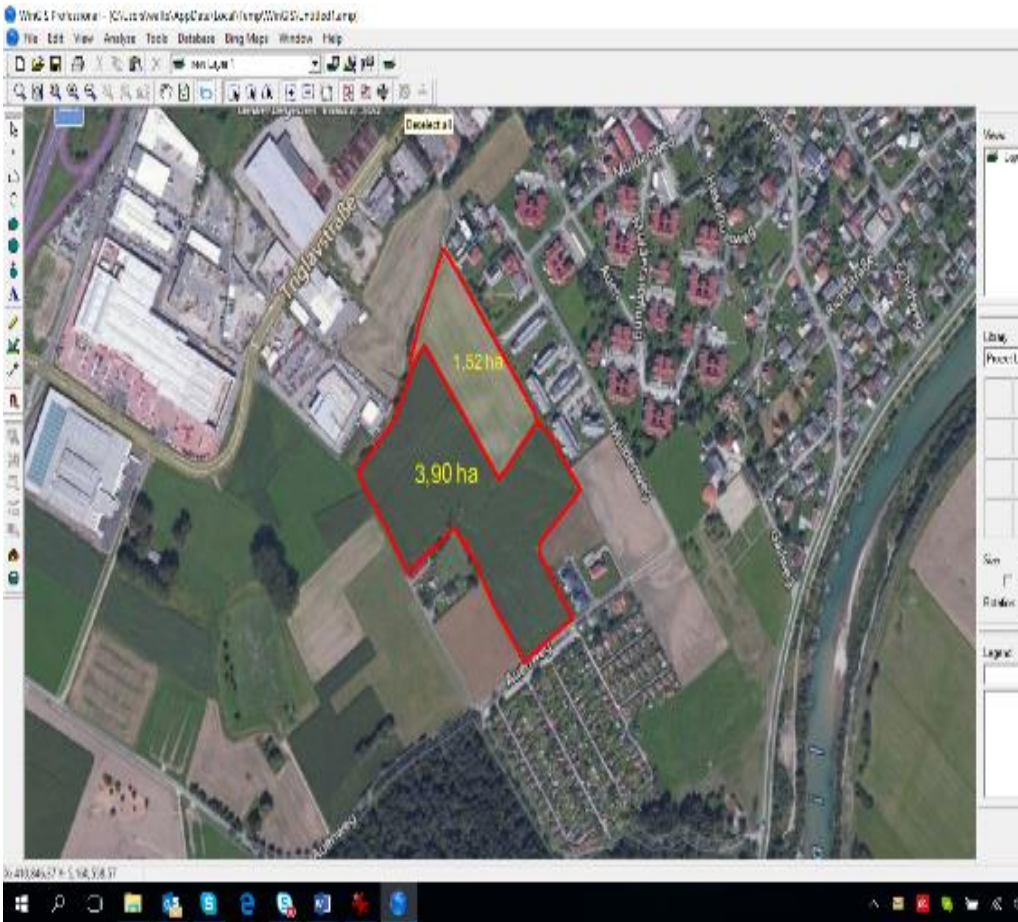




# TRANSFER DATA - INFORMATION TO GET PRECISE INTEGRAL DECISIONS

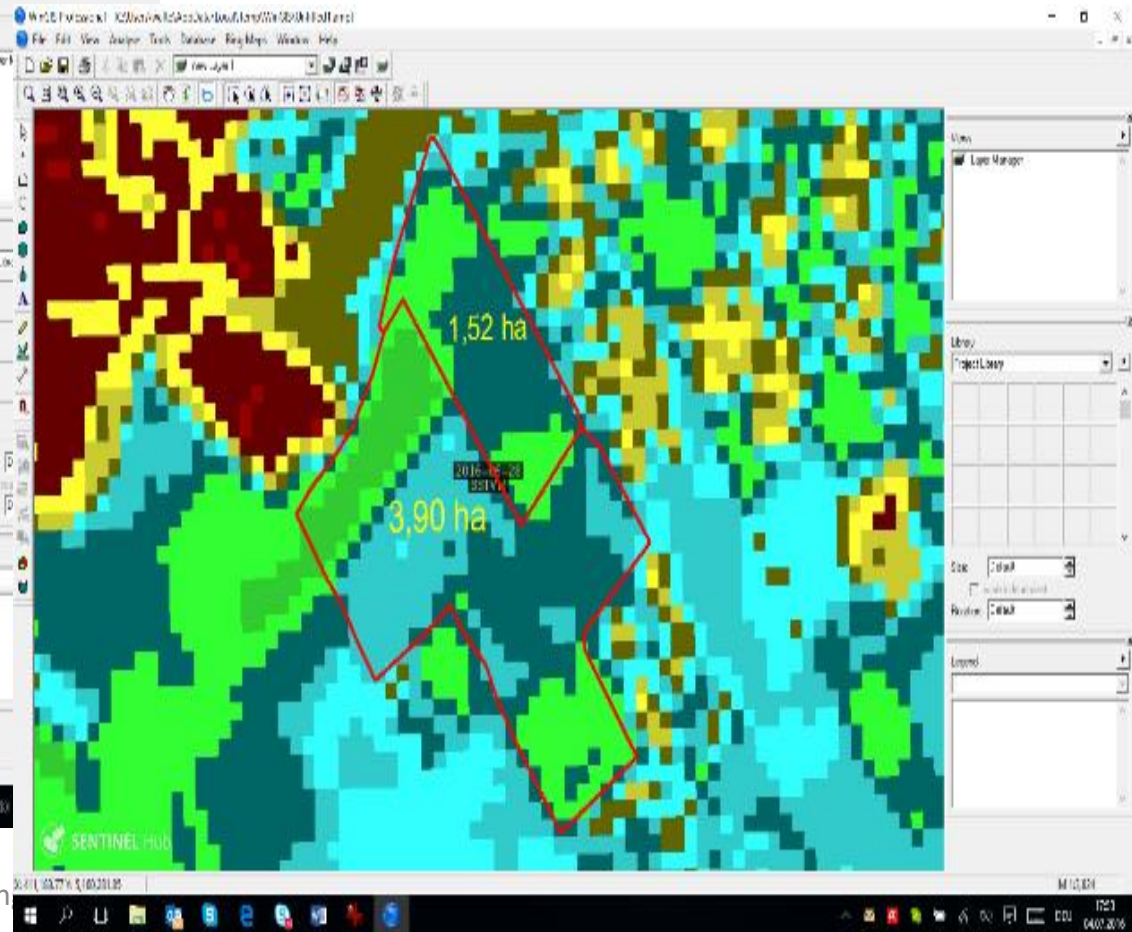
## OLD = DATA of FIELDS VILLACH:

Outskirts in the South:

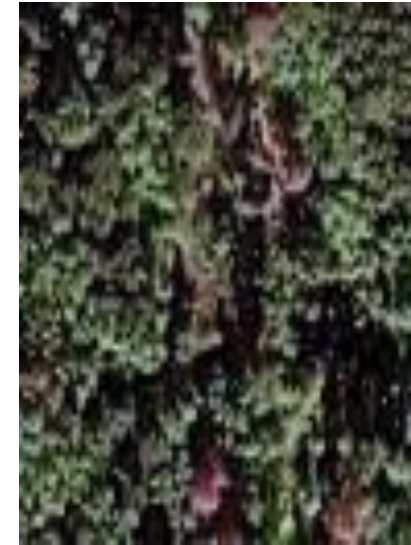


## NEW = INFORMATION of FIELDS VILLACH:

Different green colours show different growth, specific date!  
Different stages (date), tell t/ha. Old data = Future forecast!



## FAO / ITU for DIGITAL AGRICULTURE SOLUTIONS ASIAPAC 11/2020 – SUSTAINABLE AND GLOBAL



Left: Satellite 0,5m res MidL: Zoom visualize bark beetes MidR: Damage valuation Right: Humidity

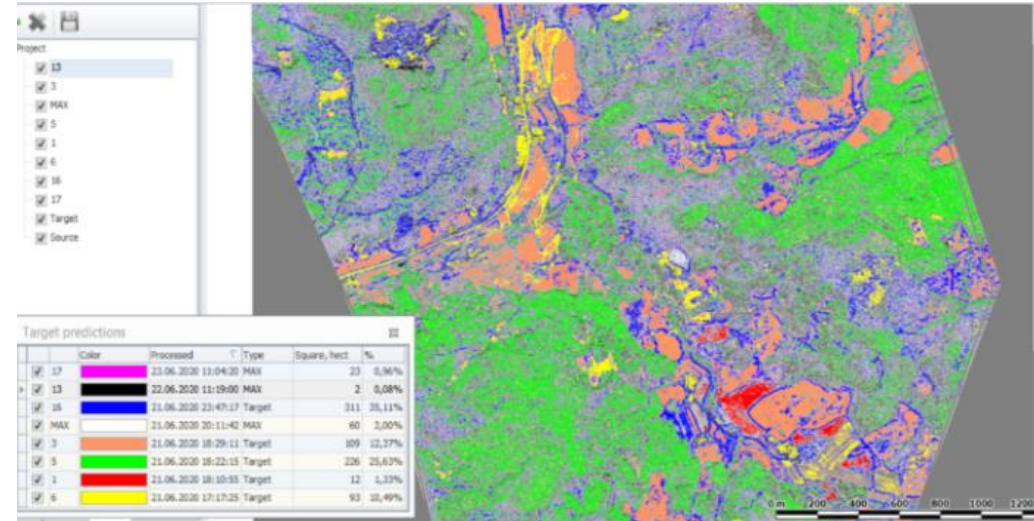
HOW CAN THE PROBLEM IS SOLVED? WinGIS + IDIMA + WHEN - WHERE - WHAT HAS TO BE DONE?

# FAO / ITU for DIGITAL AGRICULTURE SOLUTIONS ASIAPAC 11/2020 – SUSTAINABLE AND GLOBAL

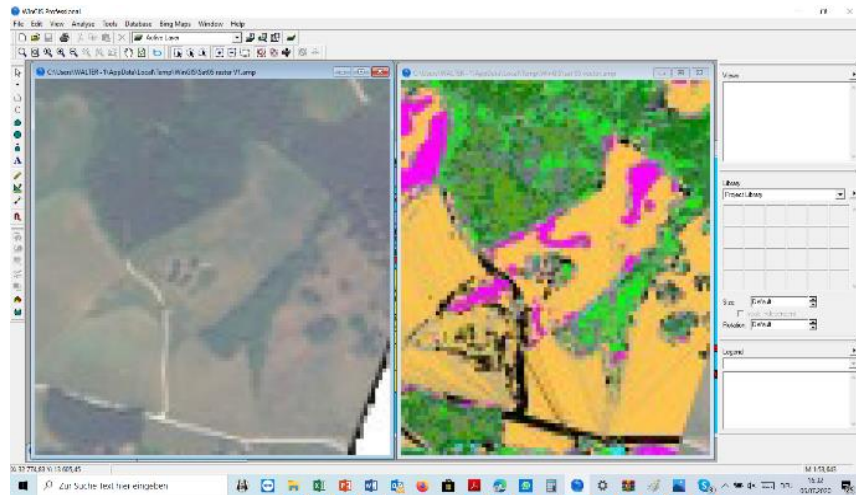


An expert visualizes a sat-image with 0,5m or less resolution

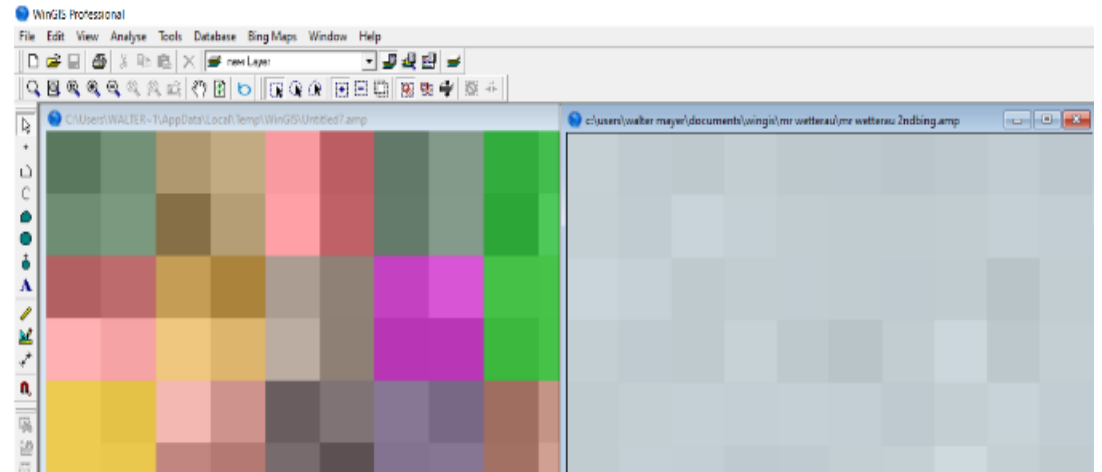
SOLUTION FOR SUSTAINABILITY: WITH UP-TO-DATE BASIC DATA, LOTS LOCAL KNOWHOW FROM EXPERTS, ICT AND EMEGENCE WITH LOT'S OF MATHEMATICS &. PHASICS DATA GET INFORMATION AND GIVES EXACT DECISIONS AND CONTROL! WHEN EMERGENESS CONSIDERATION = COMMON SENSE IS BENEFITS AND LOT SUSTAINABILITY FOR ALL! POLICY WILL NEED A LOT, URGENCE IN THE FUTURE: MORE SMART, LEISURE, HONEST, LITTLE LAZY, STUPID, ROGUE! MORE EDUCATION, CULTURE, NATURE AND MUCH MORE CREATIVE THAN JUST IQ AS IT'S OFTEN STUPIDITY WITH REPETITION! ONLA, PLEASE THINK AS FUTURE WILL TELL 1+1>2 IF COOP-BRAINS FOR SUSTAINABILITY FOR ALL OF US!



IT expert does algorithm and the local expert does few local verification



The system detect all structures and digitizes automatically



Left: Satimage resolution today, colour, many mathematic formulas behind!

Right: Plane – pic 15 years ago, after ½ year, b/w! Today precise, daily, global!

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# GLOBAL ECOLOGY DAMAGE VALUATION AS DRIVER:

**KNOWHOW, TRAINING, TECHNOLOGY, BOOK**

Available to verify, document, calculate

- I. Summary damages + Corona calculated:  
global: with 1) Corona defined cases, 2) Corona dead, 3) %inhabitants dead, 4) Infected GNP losses 5) Forest areas in ha / inhabitant 6) relation losses / inhabitant to losses/ha forests 7) Sum losses in Trio €:

**Global calculation model available**

Corona confirmed	Corona dead	Corona in% from inhabit	Coron.BNP1:Verlust/Ew € in ha	Waldria./Ew. zu BIP Veri. pro ha Wald	Relat. Wald zu BIP Veri. pro ha Wald	Verlust tot Mio €/a
22		0,0001	0,05	0,03	0	0
55	1	0,0018	10,07	0,26	3	5
60	4	0,0001	0,80	0,06	0	0
				0,02		
				2,04		
				0,10		
68	2	0,0002	2,80	0,75	2	15
78		0,0026		0,09		
				7,12		
1332	3	0,0152	901,97	0,44	397	3971
28	1	0,0003	1,46	0,05	0	2
				0,52		
228	1	0,0228	994,51	0,01	0	0
10		0,0000	0,01	0,00	0	0
36		0,0004	2,45	0,79	2	31
1243	10	0,0110	596,71	0,06	35	596
				1,65		
1		0,0000		0,21		
11		0,0001	0,43	3,20	2	48
26		0,0007	3,67	0,55	2	44
				5,97		
321	1	0,0002	1,67	2,30	4	92
56		0,0056		0,28		
67	2	0,0009	9,46	0,51	5	126
18		0,0018		0,34		

**Global dataset available, 193 countries + approx. 60.000 data**

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# EUROPEAN UNION - GREEN DEAL PROJECTS, also for external partners

## Area 1: CROSS SECTORAL CHALLENGES

... Combating and fighting extreme wildfire

topic 5

... Climate resilient innovation packages for EU regions

topic 4

## Area 2: CLEAN AFFORDABLE AND SECURE ENERGY

... Link between renewables and commercial industrial applications

topic 3

... Partnership with Africa

topic 1

## Area 4: ENERGY AND RESOURCE EFFICIENT BUILDINGS

... Building and renovating in energy and resource efficient way

topic 6

## Area 6 FARM TO FORK

... Farm to fork Testing and demonstrating system innovation (mobile area 5 in)

topic 2

## Area 8-10: 8 ...ZERO POLLUTION – 9 ... SUPPORT EGD – 10 . EMPORE CITIZIENS

topic 7,8,9

..... Innovative ..... European Green Deal challenges ..... Social ands cultural challenges

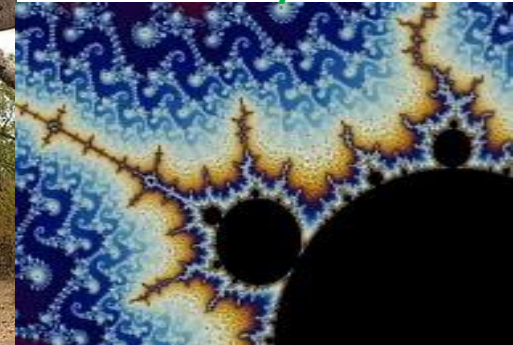


E<sup>3</sup> ECOLOGY + ECONOMY + ENERGY = SAFER  
Nature can be big or  
small - always clever

# FAO/ITU for DIGITAL AGRICULTURE SOLUTIONS FORUM 2020 ASIAPAC

DIGITIZING THE ECOLOGY BRINGS NEW INFORMATION - BETTER DECISIONS, GLOBAL USE, COOPERATIVE, PRECISE, and E<sup>2</sup> E<sup>3</sup>: daily, global Ecology + Economy + Energy – SUSTAINABLE with SAFER: Sustainable Agriculture Forestry Environment, natural Riskmgmt.

## WE MUST CLOSE TODAY'S PROBLEMS WITH FAO + ITU + OGC/GODAN + EU GREEN DEAL: DATA TO INFORMATION TO PRECISE DECISIONS FOR A SUSTAINABLE NATURE



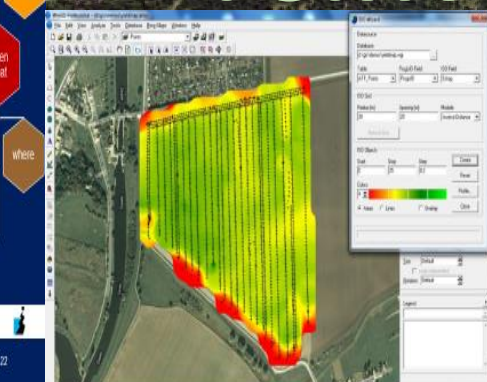
WHEN

ICT TOOLS

FARM-FORESTRY-ADVISORY-MANAGEMENT

WHERE

WHAT



### LOCAL PPP IS A MUST

Dipl.Ing. Walter H. MAYER,  
CEO PROGIS SDCC CoO  
PPP Consultant (ZT) and  
valuation-expert at courts

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